

Organisational aspects and expected benefits

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APPENDIX 1 : Survey on ROSATTE “Organisational aspects” - questionnaires and detailed results

Section 1 of this appendix provides the two versions of the questionnaire used in the “Organisational aspects” study: one version was used for the road authorities and another one for map providers. Section 2 of this appendix gives a detailed overview of the results of the study.

1. Questionnaires “Organisational aspects”

1.1 Road authorities

The answers to the first three questions are not included in this annex because they are actually related to D1.1.

Questions in relation to the ROSATTE D1.1 deliverable:

Are you currently developing a road database?

What is the purpose of the database (road management, ITS...)?

Which areas of the database are under development?

What are the most important safety attributes in the database (speed limits, traffic signs, ...)?

When do you expect the development to be finished?

Are you planning to improve or extend a road database?

What is the purpose of the database (road management, ITS...)?

What will be the upgrade actions?

What are/will be the most important safety attributes in the database (speed limits, traffic signs, ...)?

When will you start the upgrade and when do you expect it to be finished?

Are you planning to create a road database?

What will be the purpose of the database (road management, ITS...)?

What will be the most important safety attributes in the database? (Speed limits, traffic signs, ...)

When will you start the development and when do you expect it to be finished?

Organisational and technical questions in relation to the ROSATTE project:

According to you, what are the main technical barrier(s) to the deployment of such a ROSATTE infrastructure in your country?

According to you, what would be the major barrier(s) with respect to national/regional/local organisation in your country? In the other EU Member States?

Will it be feasible in your country/ region to have the same infrastructure operating at the different organisational levels? Which barriers need to be overcome?

What is the position of your country/region about making the safety attribute database available to third parties? Under which conditions would your country be willing to do so?

As a public authority or road administration, would you be ready to pay and/or put efforts for setting up a ROSATTE data store or do you expect the map makers or any other party to pay and/or put effort for it?

How do you see the interaction between the ROSATTE infrastructure and the databases already existing in your country/ region?

ROSATTE has identified different entities (Data Store, Data Service, Discovery Service, Subscription Service, Information Provider Service - see D1.2 pg 23). Are they relevant for your country/ region or do you see any other important entities that are missing?

ROSATTE has identified different roles (Enacting Authority, Data Store Operator, Information Provider and Data Provider, ... - see D1.2 pg 18). Are they relevant for your country/ region or do you see any other important roles that are missing?

ROSATTE has defined some use cases for data storage & maintenance, data exchange and data integration (see figures 4, 5 and 9 of D1.2). Do you find them relevant for your country/ region as well? Can you identify any other?

What technical difficulties do you expect if you would implement the ROSATTE infrastructure in your country/ region?

What would be the main benefits and draw-backs of such an infrastructure?

Administrative benefits and draw-backs?

Financial benefits and costs?

Social benefits?

In your country/region, how would you ensure commitment of all stakeholders necessary for collecting, sharing and updating road safety attribute information?

Do you expect any IPR or legal issues to be raised?

Would you rely on a ROSATTE quality control or would you carry out your own quality control?

Would it be easier for you to implement the ROSATTE infrastructure if the tools and formats developed within the ROSATTE project would be standardised?

Would you consider the creation of a "certification body" useful in order to ensure that the ROSATTE infrastructure, tools and mechanisms are run properly?

How would the ROSATTE infrastructure improve your position and capability towards data collection, exchange and information update?

If the ROSATTE infrastructure would be available tomorrow, how would you proceed to implement it in your country?

How much time would you expect before implementing it in your country/region?

When do you expect it to be up and running?

What kind of measures would you need to take before it can be fully implemented?

Which actors need to be involved in setting up such a data chain?

Which recommendations would you take to increase awareness of involved stakeholders on their respective roles and responsibilities?

1.2 Map providers

According to you, what are the main technical and organisational barrier(s) to the deployment of such an infrastructure in the different EU countries?

Do you already have experience in receiving attributes data from public authorities or road operators?

How was the data exchanged? What difficulties were encountered?

Under which conditions? Was there a pre-existing contract? Did you have to pay for it?

As a map provider, would you be ready to pay and/or put efforts for setting up and implementing a ROSATTE data store in the different EU countries? Or do you expect any other party to pay and/or put effort for it?

What is your motivation for participating in setting up a ROSATTE infrastructure across Europe?

Do you expect any IPR or legal issues to be raised?

Would you rely on a ROSATTE quality control or would you carry out your own quality control?

Would it be easier for you to implement the ROSATTE infrastructure if the tools and formats developed within the ROSATTE project would be standardised?

Would you consider the creation of a "certification body" useful in order to ensure that the ROSATTE infrastructure, tools and mechanisms are run properly?

If the ROSATTE infrastructure would be available tomorrow, how would you proceed to implement it?

How much time would you expect before implementing it?

When do you expect it to be up and running?

What kind of measures would you need to take before it can be fully implemented?

Which actors need to be involved in setting up such a data chain?

Which recommendations would you take to increase awareness of involved stakeholders on their respective roles and responsibilities?

2. *Results overview and conclusions*

In this section, the answers received from the road authorities will be described first. After that, the answers from the map providers will be dealt with. Only the main results of the questionnaire will be given in this paragraph. The detailed questionnaire results can be found in Appendix 1, section 3.

The aspects to be highlighted by this section from the road authorities point of view:

Technical barriers

Organisational barriers

Availability to third parties

Willingness to pay and/or put efforts for setting up a ROSATTE data store

Interaction between ROSATTE infrastructure and the existing databases

Expected technical difficulties when implementing ROSATTE infrastructure:

Benefits and drawbacks of ROSATTE infrastructure

Commitment of all stakeholders

IPR and legal issues

Quality control

Standardization

Certification body

Influence of ROSATTE infrastructure

Implementation of ROSATTE infrastructure

The aspects to be highlighted by this section from the map makers point of view:

Main technical and organisational barriers for the deployment of a ROSATTE infrastructure

Experience in receiving attributes data from public authorities or road operators

Willingness to pay and/or put efforts for setting up a ROSATTE data store

Motivation for participating in setting up a ROSATTE infrastructure across Europe

IPR and legal issues

Quality control

Standardisation

Certification body

Implementation of ROSATTE infrastructure

2.3.4.1 Road authorities

Technical barriers

The different countries and regions listed the following topics as main technical barriers for the deployment of a ROSATTE infrastructure (see graphical representation):

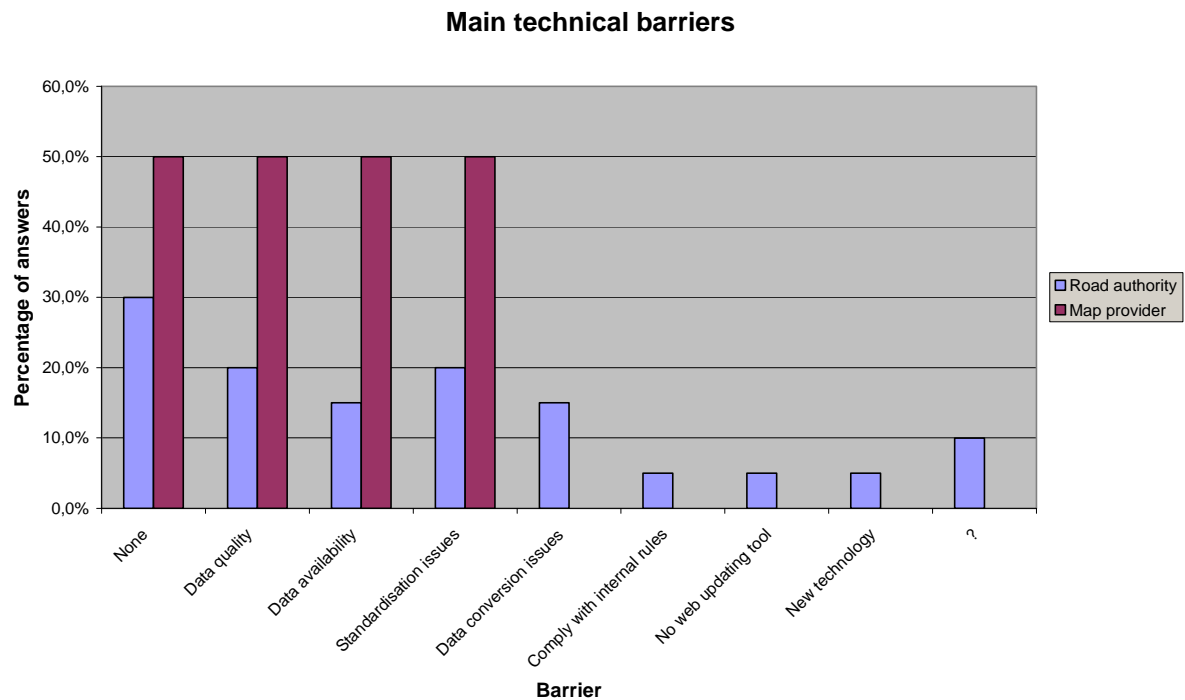


Figure 1 - Graphical representation of the main technical barriers. The question mark indicates that the authority did not answer this specific question.

Conclusion:

30% of the road authorities do not expect any technical barriers at all. Only 33% of these 30% authorities that do not expect any technical difficulties are ROSATTE project partners.

The most important technical barriers for the deployment of the ROSATTE infrastructure seem to be the data quality, data availability, standardisation issues and data conversion issues.

Organisational barriers

The different countries and regions listed the following topics as main organisational barriers for the deployment of a ROSATTE infrastructure (see graphical representation):

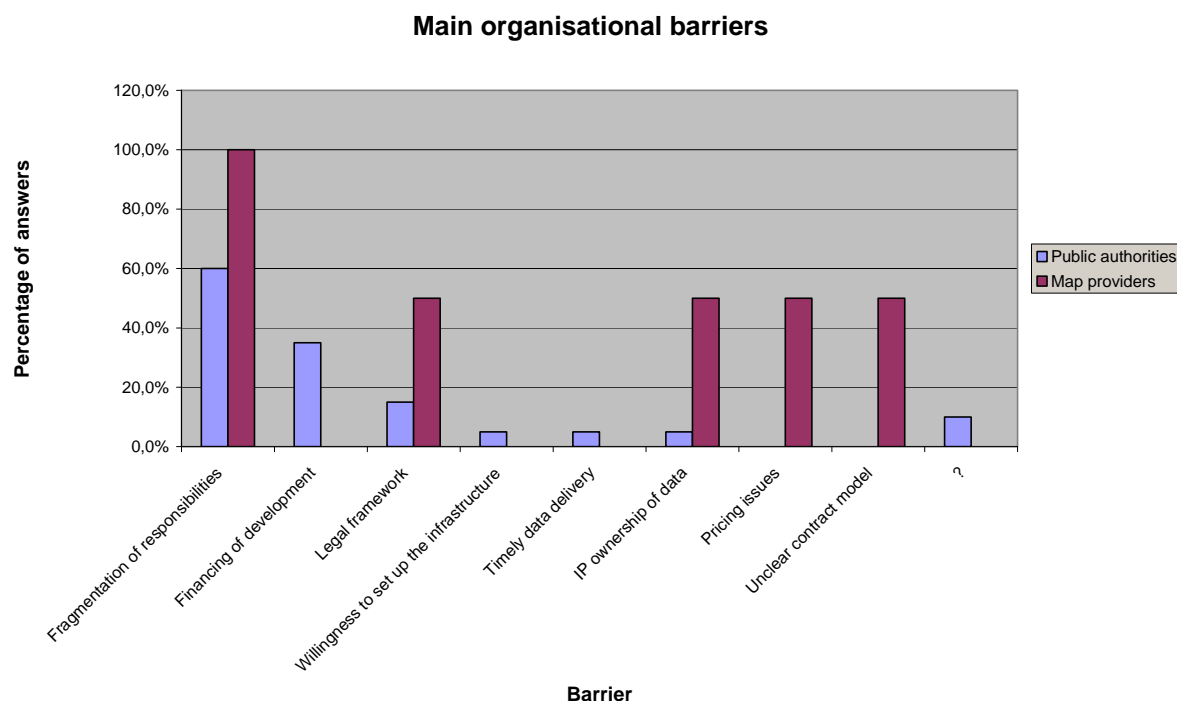


Figure 2 - Graphical representation of the main organisational barriers. The question mark indicates that the authority did not answer this specific question.

Conclusion:

The fragmentation of the responsibilities between the different organisational levels in a country or region is clearly seen as the most important organisational barrier for the deployment of a ROSATTE infrastructure. The financing of the development is also seen as an important organisational barrier.

Most authorities (70%) consider it as feasible that the same infrastructure is operational at different organisational levels. Most of these authorities (40%) state however that it will be difficult. None of the authorities considers it as unfeasible, 30% of the authorities do not have a viewpoint yet.

Availability to third parties

Conclusion:

Most road authorities (75%) are willing to make the safety attributes available to third parties. However, most of them (65%) are only willing to do so under certain conditions. The condition 'cost' and 'contract' are most frequently mentioned.

20% of the road authorities did not decide yet how they would deal with this.

Willingness to pay and/or put efforts for setting up a ROSATTE data store

Conclusion:

Almost 50% of the road authorities is willing to put effort in setting up a ROSATTE data store. However, 25% of the road authorities think that it should be a joint effort.

20% of the road authorities is not able to take a position yet

10% of the road authorities state that they are just not willing to put efforts in setting up a ROSATTE data store.

Another 10% thinks it will not be obvious.

Interaction between ROSATTE infrastructure and the existing databases

Conclusion:

40% of the authorities that completed the questionnaire did not answer the question about the relevancy of the ROSATTE entities, roles and use cases.

Among the answers, most road authorities consider the entities, roles and use cases defined within the ROSATTE project as being relevant.

Expected technical difficulties when implementing ROSATTE infrastructure:

Conclusion:

55% of the road authorities did not answer the question about the expected technical difficulties when ROSATTE would be implemented in their country or region.

10% of the road authorities does not expect any technical difficulties.

The other 35% of the road authorities do expect to encounter certain technical difficulties (Linking safety attributes with linear referencing system, Agora encoding, lack of resources, zero measurement, implementation of different standards, compatibility with existing systems, relation between ROSATTE requirements and PA requirements)

Benefits and drawbacks of ROSATTE infrastructure

Conclusion:

Almost all road authorities acknowledge that a ROSATTE infrastructure will have administrative benefits. Some of them also fear some administrative drawbacks however.

The ROSATTE infrastructure is considered to give as many financial benefits as drawbacks. The major financial drawbacks relate to the cost for setting up and maintaining such an infrastructure.

Road authorities all agree that there will only be social benefits.

Commitment of all stakeholders

Conclusion:

30% of the road authorities assume that a good way to ensure the commitment of all stakeholders necessary for collecting, sharing and updating road safety attribute information is to do so by law.

20% of the road authorities think that explaining the win-win situation could also be a good way to ensure commitment.

Goodwill, information sessions and a central entity that organises and monitors it are means that were mentioned by 15% of the road authorities.

IPR and legal issues

Conclusion:

Between the road authorities the opinion is spread. About 40% of the road authorities think there will be legal or IPR issues, 30% thinks that there won't be any issues. The other 30% did not answer the question.

Quality control

The question was asked whether road authorities and map providers would carry out their own quality control or if they would rely on the ROSATTE quality control. What the ROSATTE quality control would be, was not yet specified, since this was not yet elaborated at the moment the questionnaires were distributed.

Conclusion:

35% of the road authorities did not answer the question.

35% of the road authorities prefer their own quality control.

20 % prefer a combination of the ROSATTE quality control and their own quality control.

Only 10% of the authorities would rely on the ROSATTE quality control.

Standardisation

Conclusion:

The majority (60%) of the road authorities thinks it would be easier for them to implement the ROSATTE infrastructure if the tools and formats developed within the ROSATTE project would be standardised.

Quite some road authorities did not take a position (35%) and 5% of the road authorities answered negatively to the question.

Certification body

It was asked if the road authorities support the idea that the creation of a "certification body" could be useful in order to ensure that the ROSATTE infrastructure, tools and mechanisms are run properly.

Conclusion:

50% of the road authorities consider a certification body as being useful. However, 20% of the road authorities do not consider it as being necessary. One road authority is even sceptical towards the realisation of such a centralized certification body.

30% road authorities did not answer the question.

Influence of ROSATTE infrastructure

Conclusion:

35% of the road authorities did not answer this question.

The other road authorities agree that the ROSATTE infrastructure would improve their position and capability towards data collection, exchange and information update.

Implementation of ROSATTE infrastructure

The following question was asked to the road authorities:

"If the ROSATTE infrastructure would be available tomorrow, how would you proceed to implement it?"

- a) How much time would you expect before implementing it?
- b) When do you expect it to be up and running?
- c) What kind of measures would you need to take before it can be fully implemented?
- d) Which actors need to be involved in setting up such a data chain?
- e) Which recommendations would you take to increase awareness of involved stakeholders on their respective roles and responsibilities?"

The next subparagraphs will address each of these sub questions.

Country	Database available	Updates possible	ROSATTE compliant	Comments
	Yes/No	Yes/No	Yes/No	
Austria-Lower Austria	Yes	Yes	?	
Austria-Tyrol	No			
Belgium-Flanders	Yes	Yes	Yes (test site)	Some more work is needed to make the entire traffic sign database of Flanders ROSATTE compliant.
Belgium-Wallonia	No			
Bulgaria	No			
Cyprus	Yes	Yes	?	It is expected that it will take 6-12months to implement the ROSATTE infrastructure. However problems are expected with available human resources and any costs associated.
Denmark	Yes	Yes	?	
Finland	Yes	Yes	?	
France	No			No common storage of safety attributes.
Germany-Bavaria	Yes	Yes		
Germany-Mecklenburg-Vorpommern	No			
Germany-North Rhine Westphalia	Yes	Yes		
Hungary	Yes	?	?	
Iceland	Yes	Yes	?	
Ireland	Yes	?	No	INSPIRE is more important than ROSATTE
Italy	Yes	No		
Lithuania	Yes	?	?	
Luxembourg	Yes	?	?	
Norway	Yes	Yes		

Slovakia	Yes	Yes	?	
Slovenia	Yes	?	?	
Sweden	Yes	Yes		
UK- Northern Ireland	No			
UK-Scotland	Yes	Yes		
UK-London	Yes			

Figure 3 - Availability of national databases, possibility of sending updates and ROSATTE compliance

Conclusion:

The ideas about when the implementation could start varied between a few months until a few years

The road authorities think that the ROSATTE infrastructure can be up and running also varied between a few months until a few year

The opinions about what kind of measures are needed for the implementation are very diverse

Most road authorities agree that that the following actors need to be involved in setting up a ROSATTE data chain:

Federal authority

Regional authority

Municipalities

Map providers

Police

Motorway companies

National mapping authority

Most road authorities believe that in order to increase the awareness of the involved stakeholders, there needs to be a communication about the win-win situation.

2.3.4.2 Map providers

Main technical and organisational barriers for the deployment of a ROSATTE infrastructure

Conclusion:

One map provider didn't see any technical barriers, while the other one listed possible barriers concerning data quality, data availability and standardisation.

Both map providers agree that the fragmentation of responsibilities is an organisational barrier. Other issues are the legal framework, ownership of data, pricing issues and an unclear contract model.

Do you already have experience in receiving attributes data from public authorities or road operators?

Conclusion:

Both map providers already have a lot of experience on this. Various kinds of payment/contractual conditions have been used so far.

Willingness to pay and/or put efforts for setting up a ROSATTE data store

Conclusion:

The map providers are willing, but only when it's a joint effort, of when it is related to a business case.

Motivation for participating in setting up a ROSATTE infrastructure across Europe

Conclusion:

The map providers listed following topics as a motivation for setting up a ROSATTE infrastructure:

a replacement of existing local suppliers with inhomogeneous data and formats
obtain up-to-date safety attribute information, which will be supplied directly to users
more structured data exchange

IPR and legal issues

Conclusion:

Both map makers expect that there will be legal or IPR issues when a ROSATTE infrastructure is deployed.

Quality control

The question was asked whether map providers would carry out their own quality control or if they would rely on the ROSATTE quality control. What the ROSATTE quality control would be, was not yet specified, since this was not yet elaborated at the moment the questionnaires were distributed.

Conclusion:

One map provider would rely on the own quality control, while the other map provider prefers a combination of both.

Would it be easier if the tools and formats developed within the ROSATTE project would be standardised?

Conclusion:

Both map providers agree that standardisation would make things easier.

Certification body

Conclusion:

Both map providers agree that the creation of a certification body would be useful in order to ensure that the ROSATTE infrastructure, tools and mechanisms are run properly.

Implementation of ROSATTE infrastructure

The following question was asked to the map providers:

"If the ROSATTE infrastructure would be available tomorrow, how would you proceed to implement it?

- a) How much time would you expect before implementing it?
- b) When do you expect it to be up and running?
- c) What kind of measures would you need to take before it can be fully implemented?
- d) Which actors need to be involved in setting up such a data chain?
- e) Which recommendations would you take to increase awareness of involved stakeholders on their respective roles and responsibilities?"

The next subparagraphs will address each of these sub questions.

Conclusion:

One map provider thinks it depends on the outcome of ROSATTE when the implementation phase will start, while the other one believes it would take at least 3 years.

The map providers both think it would take a few years before it would be up and running.

The map providers also have some measures that they think will be needed.

Following actors need to be involved in setting up a ROSATTE data chain:

Federal authority

Regional authority

Municipalities

Map providers

Police

Motorway companies

National mapping authority

The map providers suggest that mapping companies and road administrations will not realise the intended effect on traffic efficiency/safety if they run completely independent from each other, or that the project needs to be explained in short while putting the emphasis on the benefits and advantages for the respective stakeholders (win-win situation)

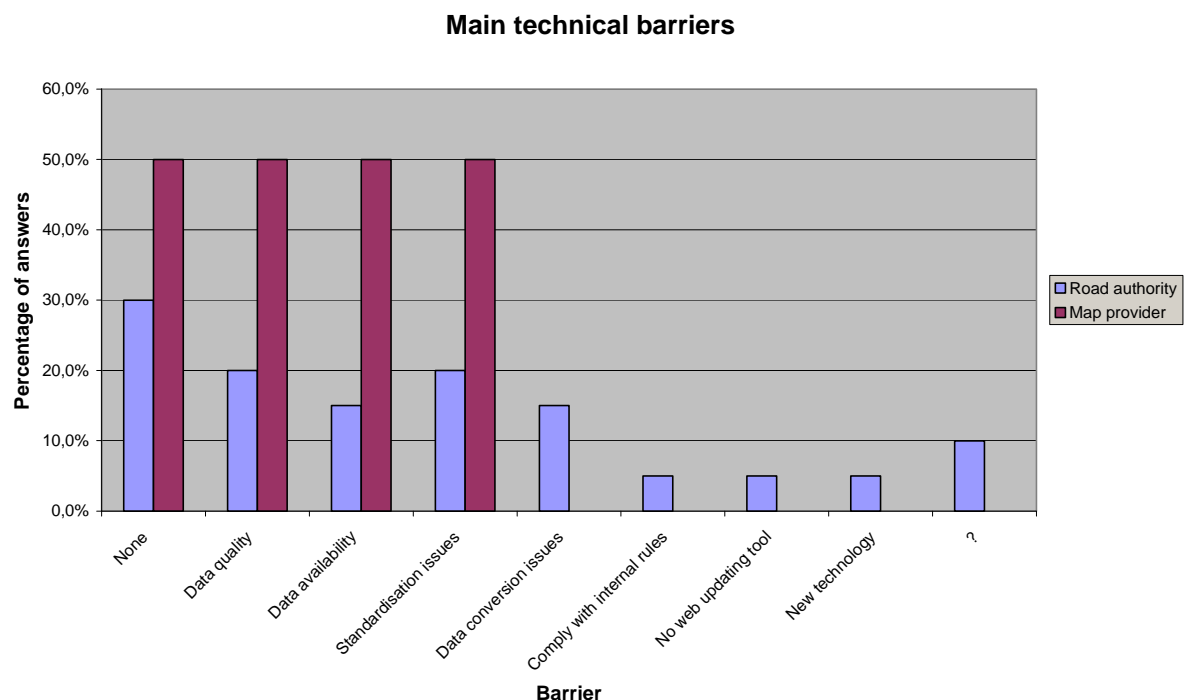
Since the questionnaire addressed topics related to each of the three tasks of work package 6, the results of the questionnaire will form the basis for the work performed in the tasks 6.1, 6.2 and 6.3.

3. Data collected per country/ organisation

2.1 Road authorities

The answers to the first three questions are not included in this annex because they are actually related to D1.1.

According to you, what are the main technical barrier(s) to the deployment of such a ROSATTE infrastructure in your country?



BELGIUM - Flanders

The main barrier will probably be the fragmentation of power between the different regions, provinces, cities and municipalities. In Belgium there are 3 regions, 10 provinces and 589 municipalities. Each organisational level has a certain degree of autonomy.

The answers to the questions in this questionnaire will be given from the viewpoint of the Flemish region. We can not speak for the other authorities involved.

BELGIUM - Wallonia

There are of course technical difficulties but the major barrier is to have time and qualified staff.

The data update is also a major subject but hard to manage.

CYPRUS

Currently within the PWD a database for infrastructure/safety data is been developed and we do not foresee any technical barriers. However, if the ROSATTE Infrastructure is compatible to the Cyprus System (developed in an SQL Server environment) we don't expect any technical difficulties.

DENMARK

Concerning the state roads there are no real big technical problems except from eventual lacks in economic resources when a service is going to be developed. Technical barriers concerning regional and local roads are data quality and availability which could be difficult to overcome.

FINLAND

The road authority requirements are possible to fulfil. Other parts are difficult to comment.

FRANCE

French Ministry:

The only technical barrier we are seeing for implementing the ROSATTE infrastructure is to comply with the internal rules and choices (e.g. software) of the Ministry to host such an infrastructure.

There may be some issues when using map database.

French Ministry + ASFA:

However the main barriers are legal, organisational and financial (cf. questionnaire 2008).

These barriers are probably triple:

legal: linked to the national administrative framework for the different authorities and operators;

organisational: the different road authorities / operators have a lot of different tasks and duties. It does not seem acceptable to burden them with too complex or expensive tasks;

financial: the cost of setting up and maintaining such a database can be too high for the ministry in charge of road safety.

GERMANY - Bavaria

There are several different systems for traffic ruling in operation.

GERMANY - Mecklenburg-Vorpommern

The technical infrastructure on the level of local governments is presumed to be the main barrier to the deployment of a ROSATTE infrastructure in Mecklenburg-Vorpommern.

GERMANY - North Rhine-Westphalia

Minor technical obstacles if ROSATTE infrastructure is standard based.

ICELAND

No particular technical barriers.

IRELAND

The main technical barriers will involve the adoption, or not of standards for geo-spatial data. The EU INSPIRE directive and the timescale it imposes on Member States will have the largest effect on these technical issues

ITALY

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LITHUANIA

The main problems of using data are a data inaccuracy and a delayed updating.

NORWAY

There will be many barriers to overcome before we see a successful deployment of a ROSATTE infrastructure in Norway. We have a well developed national road database

which contains safety attributes on the national and county roads. Also we cooperate with The Norwegian Mapping Authority and the municipalities to collect these attributes on the municipal and private roads.

Speed limit is available for the whole road network.

However, we don't have any specially designed Web updating tool for these attributes; neither do we have any open standards to float these data around.

SLOVAKIA

In Slovakia the road management is fragmented from the state level to 8 regions and 2891 municipalities (in which towns 138). The cooperation is secured by law, but there are some difficulties to fulfil given duties because of low budgets. Another barrier might be low technical standardisation. (e.g. currently the implementation of INSPIRE to the national law is being prepared, but there may be a long way to set down the regulatory decree for detailed specification.

SLOVENIA

New technology and attributes.

SWEDEN

SRA can not see any major barriers of deployment in Sweden.

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

The purpose of the Project is to consider the collection of information about measures in place (eg signs, restrictions) that will promote road safety and its provision to companies marketing provision of navigational aids for drivers and to map publishers.

The factors in Scotland that may act as the main barriers to a single nationwide system are:

- the current division of responsibility for roads between the Trunk Road Authority (TRA) and the local roads authorities (LRA); Accessibility of LRA databases (see last sentence on page 34 of Deliverable D1.1 State of the Art);

- the availability of databases that are kept up to date in all those authorities;

- a common standard of provision at TRA and LRA levels throughout Scotland and the UK;

- the resource requirements of developing and maintaining databases (more likely for the LRAs than Scotland's TRA);

- whether the companies providing navigational aids for drivers and the map publishers can agree and work to a common method and standard for provision of data;

- agreement between the roads authorities and companies on the details to be made available and frequency of updates; and

- the legal liability in cases where the information may not be considered as current (or is inaccurate).

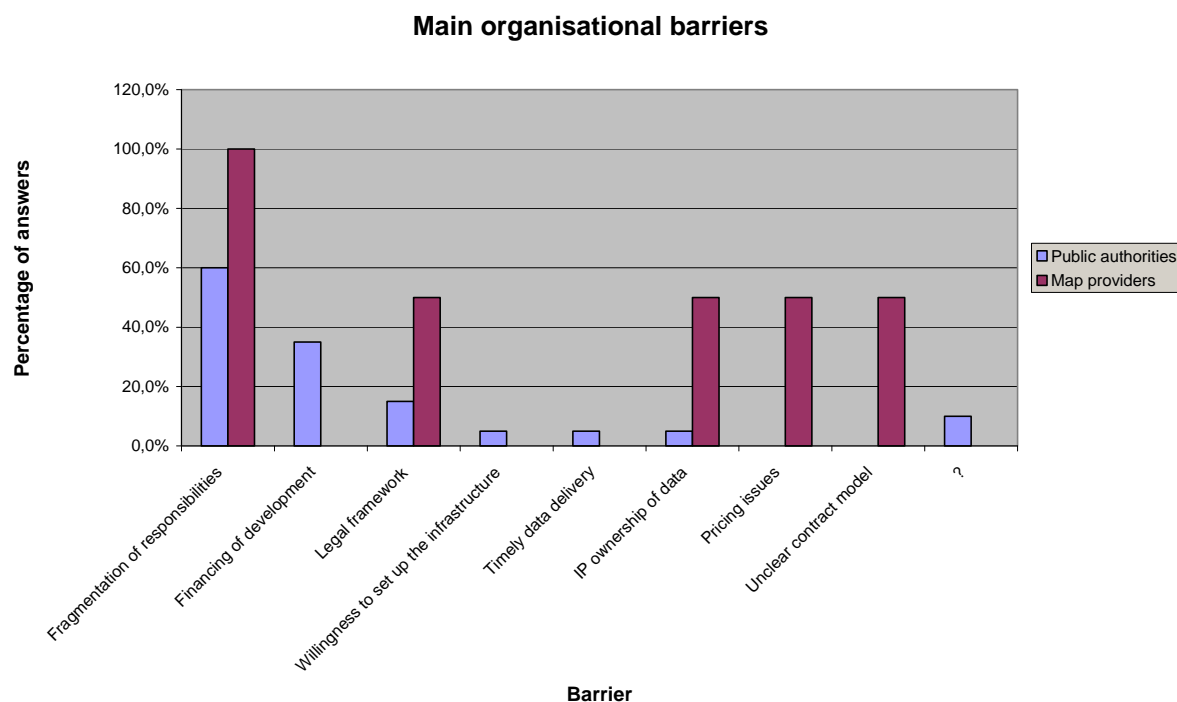
UNITED KINGDOM - London

We need to obtain an Agora encoder

Our mapping is all based on Ordnance Survey (OS), so would need to be able to convert data effectively. We have collected the speed limits as point items, then overlayed onto an OS map. We own the points, but the links of the OS map are derived data and IPR belongs to OS. The issue of derived data with OS may be an issue.

Would the fact that the UK uses miles per hour as opposed to kilometres per hour be an issue?

According to you, what would be the major barrier(s) with respect to national/regional/local organisation in your country? In the other EU Member States? Will it be feasible in your country/ region to have the same infrastructure operating at the different organisational levels? Which barriers need to be overcome?



BELGIUM - Flanders

As can be deduced from the answer to question 4, a good cooperation between the different authorities will be necessary. This will not be obvious however, since there are so many authorities involved.

Region: yes it is feasible. The database of the traffic signs along the roads under the jurisdiction of the Agency of Roads and Traffic in Flanders was elaborated first. The same system is currently used to make an inventory of the traffic signs along the other roads in Flanders.

BELGIUM - Wallonia

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CYPRUS

In our case, the PWD is responsible for the road database and the HMS as a whole that is a National Organization therefore no other levels need to be considered.

DENMARK

Generally it will be an advantage with the same infrastructure - what ever it is. Barriers to overcome: Many - first of all to come to an agreement concerning the concept with the local administrations, then to finance the required development in the local systems and then to secure data quality.

FINLAND

It is positive to have the same infrastructure for different levels.

FRANCE

French Ministry:

The French constitution states the free administration for each regional/local authority (region, département, community). Therefore when a new obligation is imposed by a law the State must give means / fund local authorities for fulfilling these new duties.

As such, the actual splitting of the duties among a very high number of authorities makes very hard (and quite impossible) any participation based on a voluntary basis (e.g. 36 000 mayors to convince!). And it is not the current trend to define new obligations by law.

Moreover, a part of the national road network is operated by 14 private motorway companies. Their duties are defined in a grant with the State. It is then difficult to amend such contracts through new constraints that may change the economical balance.

French Ministry + ASFA

Yes it is feasible although difficult due first to the number of decision makers in France (around 40 000!). However what is true in one county, is true in another one ...

Nevertheless, it implies to have together different ways (or means) to collect data, the legal framework to make the different road authorities and operators to cooperate and an entity in charge of the database management. Moreover, there needs to be a real willingness in the Ministry to set up and operate such an infrastructure.

Whatever the adopted solution for organisation, a great number of actors have to be considered, due to the high number of stakeholders (in France there 36600 communities, 100 counties not to mention a number of intermunicipal cooperation entities, 11 specialised road departments and 14 motorway companies. All of them are supposed to create and input safety attributes.

Besides, depending on the adopted organisation one or several database administrators can be considered. Three levels are theoretically possible:

national,
(inter)regional,
local.

The choice of the best one is not made yet. It must put in balance the closeness to decision makers and a sufficient number of regulations to maintain its knowledge.

The feasibility study defined three profiles:

police authority (or road authority)
DB administrator
field supervisor

It seems rather difficult to use and implement due first to the number of decision makers in France (around 40 000!). It implies to have together different ways (or means) to collect data, the legal framework to make the different road authorities and operators cooperate and an entity in charge of the database management. Without these three conditions, there will only be low progress on this topic.

GERMANY - Bavaria

The main organisational challenge will be the very federal system and the widespread responsibilities for traffic ruling. Thus there are many players involved. In other states it might be easier.

The Federal State of Germany has given all responsibility for road operation to the States. The Bavarian Road Administration only has direct influence on the highways, federal and state roads. Regarding district and community roads there are more than 2000 authorities only in Bavaria, which makes it very difficult to reach a common system all over Bavaria in short time.

GERMANY - Mecklenburg-Vorpommern

Based on the different jurisdictions that the road network is subject to differing databases infrastructures have been created. These differing database systems have to be standardised beforehand

GERMANY - North Rhine-Westphalia

The traffic ministry has only reduced influence on decisions on infrastructure on local level

ICELAND

Only financial barriers

N/A

IRELAND

If one of the main objectives of ROSATTE is to facilitate access and exchange at all levels of government it will be dependent on the adoption of standards and numerous formal arrangements (Local Government to National Gov, National Gov to EU etc, and some possibly encompassing IPR issues.

It is difficult to see how this harmonised infrastructure will suit all levels of government. Local Government may not have too interest at what happens at a national level but may be best placed to gather this data. However without any extra resources being made available it will be difficult form them to implement new data collection/management arrangements.

ITALY

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LITHUANIA

Presently a study, assessing various organizational and technical aspects of usage of the above mentioned data is executed. It is expected, that with reference to this study results an improvement of information systems will take place for those systems to be more effective. The reduced funding limits data collecting and upgrading.

NORWAY

I believe that the awareness among the officers that carries out the regulation and later store the safety attributes in databases (or in paper files) is the major barrier. We'll have to teach a large number of them about the public need and interest for these data and that the update speed is vital to enhance traffic safety.

Once the awareness process is started, the public authorities will need to optimise its organisation to comply with these needs. This might involve a reorganisation and increased budgets - which both might take a lot of time.

We have 430 municipalities in Norway, many of them are rather small with limited resources on this field.

Yes, we believe that the same infrastructure will accommodate all levels in Norway (municipalities, police and Public Roads Authorities).

SLOVAKIA

This topic is related to previous answer - this would need close cooperation among different road owners and administrators, in some cases depending on good will of these actors. Organisational and technical rules must be given in law, standards, e.g.

SLOVENIA

Two different managing institutions on the national level, one for HighWays and the other for the rest of national road network, and additional numerous local roads' managing authorities.

See answer to question #5.

SWEDEN

As many actors are involved the major problem probably will be to ensure timely data delivery to the ROSATTE data store..

Regarding other EU members we feel that in member states where responsibilities between the different levels -national/regional/local - not yet has been defined will face some significant tasks to solve.

In Sweden there already exists an infrastructure used by the different organisation levels to exchange data with the national database of traffic regulations (RDT) and the national road database (NVDB).

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

See responses to 4 above.

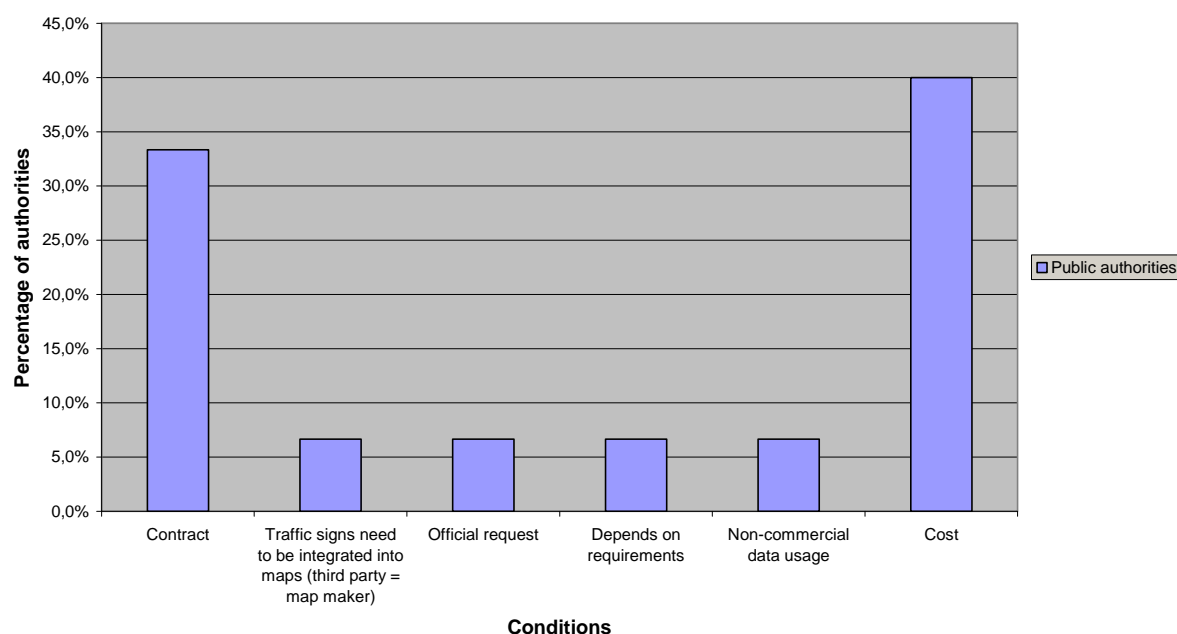
UNITED KINGDOM - London

Communication. London as an example has 33 different boroughs, all with different political leanings. Some look upon TfL favourably, others do not. Some are willing to help, some not so. The major barrier would be to get everyone on the same page, with everyone benefitting equally. Only if there is consensus and mutual benefits will you get the buy in of all the authorities. Probably the easiest way to achieve this is if it was a top down directive. i.e. the Dept. for Transport made it a requirement.

This would be possible with some work. Again it would be about have a top down directive and ensuring buy in from all organisations. Buy in would only be achieved if the solution was seen as mutually beneficial to all parties.

What is the position of your country/region about making the safety attribute database available to third parties? Under which conditions would your country be willing to do so?

Conditions for making safety attributes available to third parties



BELGIUM - Flanders

In first instance, the Vlaamse Overheid takes the position that the traffic sign database can be made available to third parties like the map makers TeleAtlas and Navteq under the condition that they will integrate the traffic signs into their maps.

In the framework of this, a contract will probably be concluded with the third parties that wish to have access to the Flemish traffic sign database.

BELGIUM - Wallonia

We are open-minded about making the safety attribute database available to third parties. Nevertheless, we are very reserved if the third part wishes to use data with commercial end. In this situation, we are faced with the financial question and the repartition of out-goings and incomings.

CYPRUS

We will be willing to make information from the Cyprus Database available to third parties provided these are received via an official request.

DENMARK

In DK - as a result of an EC-directive - data collected and financed by a public organisation shall be available to third parties without cost except for the direct cost in delivering the data. This does not count for data which can be used to identify individuals.

FINLAND

Making the database available depends on the requirements. The performance is related to the extent of the task and resources available at the time.

FRANCE

French Ministry + ASFA

The French ministry in charge of transport (MEEDDAT / DSCR) is very in favour of delivering speed limit data to third parties as well as some other safety data (e.g. prohibition / obligation road signs, railway level-crossing) taking into consideration the expected positive impact on road safety. However, delivering such data needs to identify these third parties and to formalise by contract their use.

The motorway companies share this point of view globally. Regarding dynamic speed limits, which is maybe more specific to motorways, they are willing to provide service providers with this type of information. The conditions about identifying and contracting with them are similar.

However, it is necessary to define an open business model in information market: There is no free information. Safety information as well as traffic information has an economic production cost which needs to be recognized at each stage of the value chain starting from monitoring up to drivers' dissemination through all process of communication, compilation and retailing. The data value will encourage the data quality. Both approaches (public i.e. information funded by public budget and private i.e. information paid by user offering a possibility of return of investment in data processing) can be accepted at one stage or another of the economic value chain.

GERMANY - Bavaria

If the data is available, the position of Bavaria is to give away safety relevant data. Regarding costs at least the costs for supplying should be covered. There should not be too much additional effort connected with the data supply.

GERMANY - Mecklenburg-Vorpommern

Provided there are no specific reservations regarding the use of the data we would be ready to make the data base available to third parties.

GERMANY - North Rhine-Westphalia

In principle it is our intention on making precious NWSIB informations available to others - within the road administration and beyond.

ICELAND

See the following text:

TERMS & CONDITIONS RELATING TO USE OF INFORMATION FROM ICELANDIC ROAD ADMINISTRATION (ICERA)

Icelandic law and regulation on public data availability, distribution, use and reuse apply.

Data: ICERA's collection and location of traffic signs.

To promote reuse of public information, ICERA makes this data, described in paragraph 2., available as this can benefit the public. The data is provided as is in a common format and ICERA is not responsible for this data to be correct, accurate or is responsible for how it will be used. The same applies to possible information updates - ICERA does not guaranty any updates but will endeavour to provide yearly updates on request. Any receiver of the data is free to use the information in any way in their applications including data association, redistribution, (sub) - licensing and reselling this data as part of their applications without prior consent from ICERA.

ICERA warrants that it has all right, title and ownership, including all intellectual property rights, in and to the information necessary to distribute this data.

IRELAND

There is no formal position for making available to third parties the 8 attributes currently listed (only 4 of the 8 listed under Quality, Coverage and Update Frequency) in the ROSATTE 'State of the art documents' for Ireland. Currently we provide on request map

providers whom we currently work with details of new road ailments. However Ireland, like other Member States is subject to the EU Directive on reuse of public sector data.

ITALY

ANAS is currently setting up a road safety database with, in addition to external data, information coming from other sources (ACI, ISTAT) whose completion is foreseen by the end of 2010.

LITHUANIA

The question of possibility for usage of our data by the third-parties in their own systems at this moment is under discussion in the LRA.

NORWAY

At the moment we would have to sell these data to third parties. Not too far in the future we'll have to change this policy due to a more mature awareness given in EU-Directives (INSPIRE) and the ITS-Action plan.

SLOVAKIA

Slovakia has centralised road database, however the quality depends on quality of road administrators cooperation. Slovak Road Administration as the author and owner of central road database is state budget organisation and there are some needs to set down the data providing rules. Our technology supports web based services (e.g. WMS, WFS), but to make direct data access for third parties might be little bit difficult, except of non commercial data usage. For other state based bodies the data access is for free (license based). There are no rules for commercial data service.

SLOVENIA

There is no need for it.

SWEDEN

Existing traffic regulations will be accessible via Internet from RDT - free of charge. Road safety attributes will be made available, to third parties, from the national road database (NVDB) using the existing channels for data exchange. We encourage the use of road safety attributes (and other existing NVDB information) by third parties. The condition is that an agreement is established between SRA and the involved party.

UNITED KINGDOM - Northern Ireland

Not answerable.

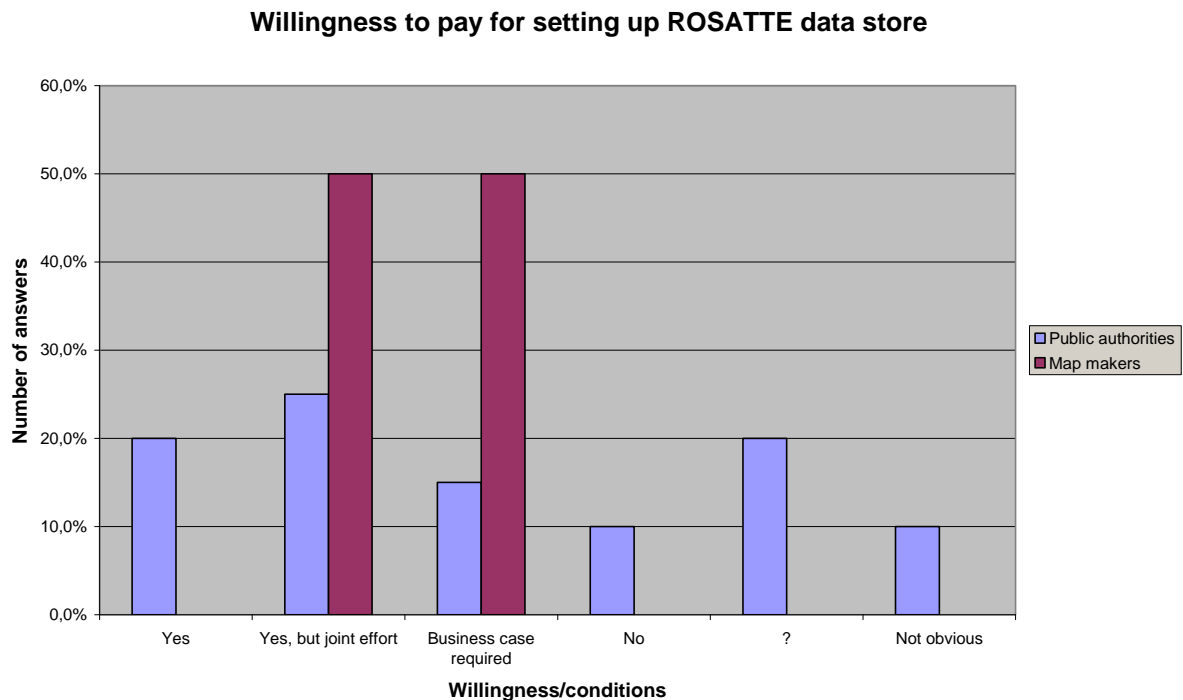
UNITED KINGDOM - Scotland

Transport Scotland, as agent for Scottish Ministers, the Trunk Road Authority, would consider making the information available to third parties at a cost to cover the cost of providing it in the form required.

UNITED KINGDOM - London

We are more than happy and currently have offered our speed limit map free of charge to anyone that wants it. We believe making this available freely will contribute to improving road safety. It is for this reason that we promote this idea.

As a public authority or road administration, would you be ready to pay and/or put efforts for setting up a ROSATTE data store or do you expect the map makers or any other party to pay and/or put effort for it?



BELGIUM - Flanders

We think that it should be a joint effort.

BELGIUM - Wallonia

We are ready to pay and/or put efforts for setting up a ROSATTE data store.

If the database is used by map providers, we also clearly expect the map makers to pay and/or put effort for it.

CYPRUS

The PWD procedures do not allow the option to pay for setting up a ROSATTE data store. Public procurement procedures have to be followed. However, depending on the actual cost or how many man hours are needed PWD will consider putting effort for the ROSATTE Data Store.

DENMARK

Difficult to answer the question. It would require a business case which shows the benefits for our organisation. The best answer for now is that a third party need to pay.

FINLAND

As a little country and with not so many actors in branch it is not obvious in Finland.

FRANCE

French Ministry

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ASFA

As partner of the Rosatte project, resources are already involved.

GERMANY - Bavaria

The map makers do have a commercial benefit from having better data, so they would have to participate in the costs, but there might also be a chance for the State to contribute.

GERMANY - Mecklenburg-Vorpommern

As a data provider we would generally not be ready to pay for setting up ROSATTE data store.

GERMANY - North Rhine-Westphalia

At present we see no necessity to construct a particularly ROSATTE data store. Business cases for support of available safety attributes need negotiations with map makers based e.g. on existing contracts.

ICELAND

Because of extremely bad financial situation in Iceland for now and foreseeingly in the coming years it is most unlikely that the Icelandic Road Administration would pay for such a project.

IRELAND

This is a difficult question to answer as there is no mention in the attached documentation about the costs involved or the extra resources needed to for "setting up a ROSATTE data store". If there is a 'cost' in collection and administrating this harmonised data store there must be a model for cost recovery both for the Public Body and the Private Operator.

ITALY

To be estimated after the completion of the ANAS project. It could be weighted the possible contribution from ROSATTE project after the executive phase.

LITHUANIA

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NORWAY

Probably, as a national public authority we would not be ready to pay a third party to set up the infrastructure. We would put in the extra effort and the resources to have this done. A municipality might be willing to pay for this though, because they might lack both capacity and competence.

We would certainly not expect map providers or others to set up the infrastructure for any public authority or road administration.

We will however have to take into consideration if the infrastructure planned to set up by The Norwegian Mapping Authority as a result of INSPIRE, will be suitable also for ROSATTE.

SLOVAKIA

The central road database in Slovakia (currently covers motorways, expressways and other main and regional roads except municipal roads, in perspective extended for municipal roads) might be available as data source for ROSATTE.

SLOVENIA

No.

SWEDEN

SRA will support data exchange in the major formats required on national (required for the national SDI) and European level (INSPIRE, ROSATTE, EuroRoadS etc). This will be done to fulfil SRAs ambition to enable use of existing road data by third parties. (See also answer question 6.)

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

Where additional work is required over and above the recording and updating of data essential for the management and maintenance of the trunk road network, Transport Scotland would expect other parties to finance their own data requirements.

UNITED KINGDOM - London

We would be prepared to pay and make an effort to set up a ROSATTE data store. We believe everyone involved that will benefit from it should contribute.

How do you see the interaction between the ROSATTE infrastructure and the databases already existing in your country/ region?

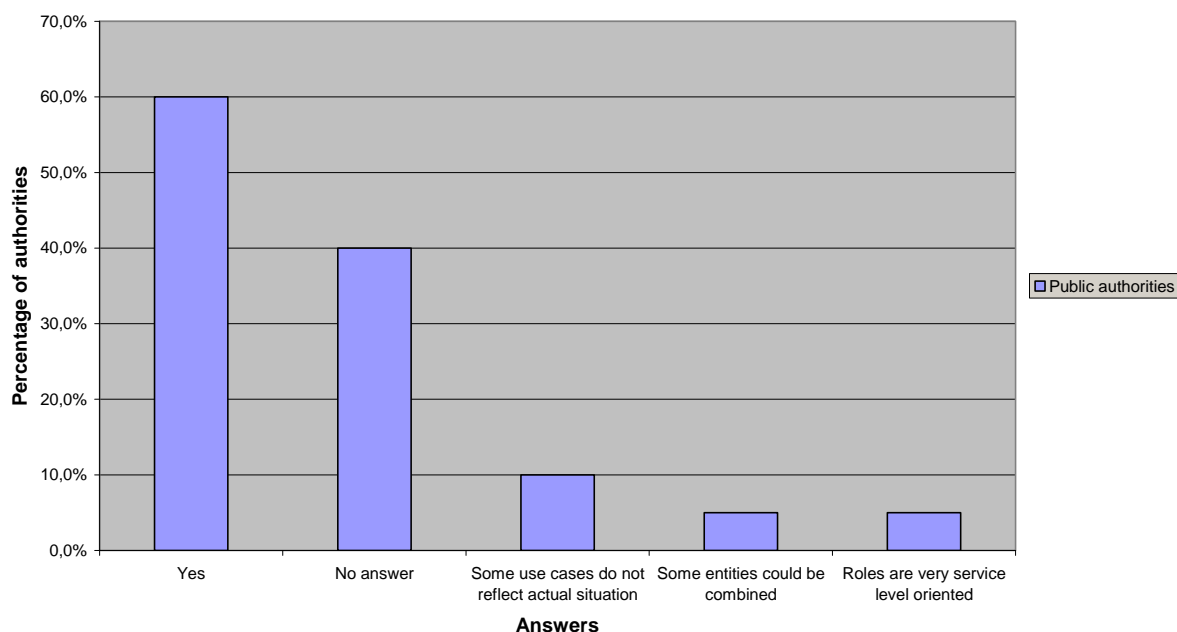
ROSATTE has identified different entities (Data Store, Data Service, Discovery Service, Subscription Service, Information Provider Service - see D1.2 pg 23). Are they relevant for your country/ region or do you see any other important entities that are missing?

ROSATTE has identified different roles (Enacting Authority, Data Store Operator, Information Provider and Data Provider, ... - see D1.2 pg 18). Are they relevant for your country/ region or do you see any other important roles that are missing?

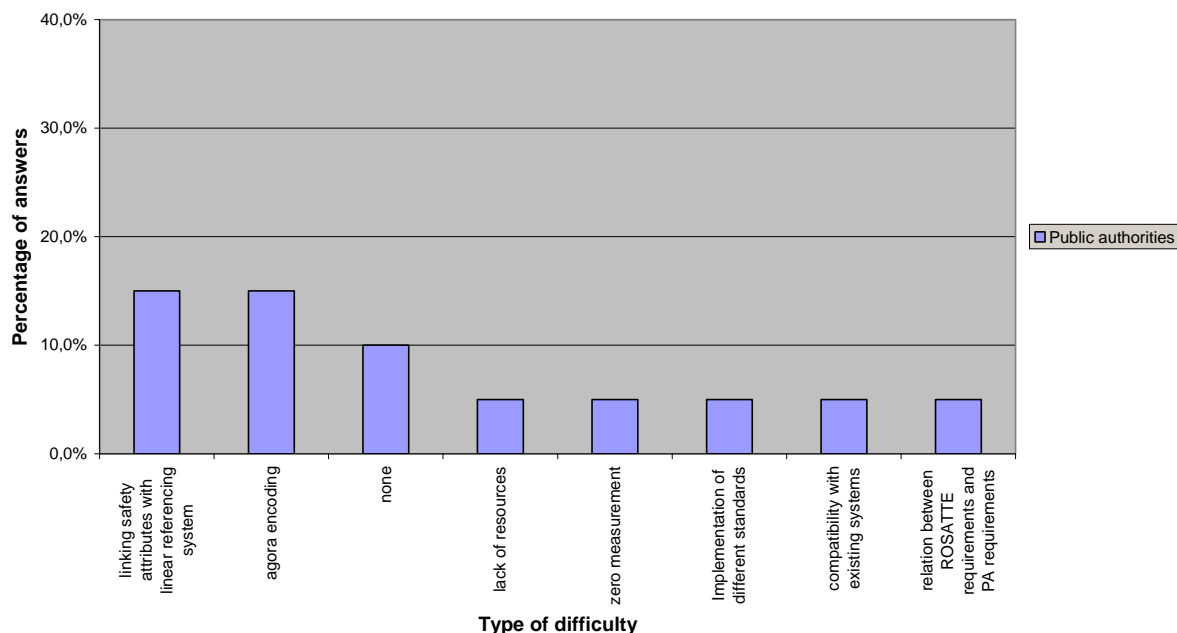
ROSATTE has defined some use cases for data storage & maintenance, data exchange and data integration (see figures 4, 5 and 9 of D1.2). Do you find them relevant for your country/ region as well? Can you identify any other?

What technical difficulties do you expect if you would implement the ROSATTE infrastructure in your country/ region?

Are the ROSATTE entities/roles/use cases relevant (D1.2)



Main technical difficulties in your country



BELGIUM - Flanders

The 2 central databases of traffic signs in Flanders (for the motorways, highways, main roads and regional roads on the one hand and the other roads on the other hand) that are currently being established were already merged into one central database. This central database will act as a data source for ROSATTE.

They are relevant.

They are relevant.

They are relevant.

The fact that Flanders is working with point location referencing might cause problems. Furthermore, the AGORA encoding is a challenge.

BELGIUM - Wallonia

The comparison between data in the database and signs really along the road is important. Tools for signs management and signs maintenance (age, condition, retro reflexion level, ...) are required for road administration.

It isn't the principal purpose of ROSATTE but it's interesting to consider integration of a specific unit or data into ROSATTE.

CYPRUS

The Cyprus system is data (traffic and accident) oriented.

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Lack of human and financial resources is definitely an issue that we would like to point out.

DENMARK

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FINLAND

In practise some of the entities could be combined.

The roles seem to be ok.

Ok

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FRANCE

For the moment, there is no national ministry database for speed limits. The motorway companies are the only ones building and feeding a specific database with speed limits. During the ROSATTE project, they are ready to have interfaces developed between their database and the ROSATTE infrastructure.

There may be local databases on some topics (local initiatives probably for maintenance reasons) but there are no central knowledge about them and no common rules for their setup.

The BALI project aims to evaluate the feasibility and the operational conditions for setting up such a national database, especially the willingness to cooperate of local authorities. The demonstrator is set up on one department (Yvelines) and deals with all the road networks.

It is planned to test export procedures within the BALI project. On the other hand, interfacing it with the ROSATTE infrastructure may need some adaptation and is not decided. It will partly depend on the logical / technical choices made in ROSATTE.

French Ministry

No specific comment

The roles identified in D1.2 are very SL-oriented and do not exactly cope with safety attributes that are linked with a legal decision (e.g. gradient or super elevation).

The adopted typology for roles in BALI is the following one:

Frame data providers;

Road data provider (incl. enacting authorities we see them more as a type of user)

Data Store operator and Data Service operator (incl. Discovery, subscription)

Clients

The UC diagram 4 does not exactly the situation for France (through the BALI demonstration) due to strong distinction between "enacting authority" and "data provider". For example the "Receive feedback" UC target Data provider as well as "Enacting authority". It is more a problem of links between roles and use cases rather of missing use cases.

Several technical difficulties may be expected when implementing the ROASTTE infrastructure beside the databases already existing:

One of the most critical issues will be to link the safety attributes natively defined with a linear referencing system (99% of cases) in local databases with Data Store database if the referent data is not present;

To initialise the speed limit (and other safety attribute) sections may be a huge work;

Issue of using a map not provided by Navteq or Tele Atlas (like IGN) with the AGORA-C encoder (reliability);

Difficulty to implement the different standards like IS 17572-3 and the necessity to make some technical choices (not always consistent with the ROSATTE choices).

ASFA

OK as partner of the project

OK as partner of the project

OK as partner of the project

See question 4.

GERMANY - Bavaria

The entities are well defined and sufficient

The roles defined cover all relevant partners, but one organisation might cover several roles

Relevant

The compatibility with existing systems might be a problem

GERMANY - Mecklenburg-Vorpommern

We are not in a position to give an accurate assessment of the interaction of our infrastructure and the ROSATTE infrastructure.

GERMANY - North Rhine-Westphalia

No additions

ICELAND

As said in the reply to question nr. 6 the Icelandic Road Administration could give data to this data base if requested.

N/A

N/A

N/A

N/A

IRELAND

The concept of a regional and national 'data services', 'discovery services' etc is laudable but the main driver for change will come from initiatives like national SDI projects and the INSPIRE directive not ROSATTE. Therefore I don't see how at any level Ireland could facilitate ROSATTE and its requirements before INSPIRE.

Not relevant at present, road safety stakeholders exchange information within informal arrangements and have been doing so successfully for at least the last decade.

The roles ROSATTE are identified on page 22 not page 18 cited above. The roles describes would have parallels in Ireland. I don't see any important roles missing from the list.

Figure 4 identifies the actor (data store operator) and their function to 'import road safety attributes'. However it assumes that "metadata like quality characteristics may be updated". What if no metadata exists? What actor is responsible for adding and maintaining safety attribute data? What is expected from the 'feedback function' if there is insufficient metadata on the road safety attributes?

The technical difficulties are somewhat irrelevant. Structural and organisational agreements will have to be addresses first. For example, why should the 'data store operator' who is most likely to be the road authority, go to the expense of providing "hardware and software structures necessary to store attributes and communicate with the other ROSATTE components"?

ITALY

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LITHUANIA

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NORWAY

On the national level, the interaction will be in place. The other levels will probably need to develop the interaction with the National Road Database as well.

Yes. And no, we don't see any significant entities that are missing.

Yes, there are others, but the most important are covered in the ROSATTE infrastructure.

Most of them are relevant, although they will need a Norwegian adoption to fit perfectly.

The fact that we did not spend time finding more use cases, is promising for the use cases already there.

Coordination between the different levels of authorities. We will probably have to deploy slightly different systems for the different levels of authorities - in order to adapt to the needs and competence of the different users at the different levels of authorities.

SLOVAKIA

We see the quite same infrastructure in the project which is currently prepared in Slovakia - National system of transport information - under this project a lot of topics would be defined and solved; the main goal of this system is cooperation of all necessary state bodies and their organisations to provide the transport information and data from their agenda to central level and at opposite to use the information and data from central level in their agenda. This project should be reflected in law, in standards and there will be a solid base to define and clear all roles and responsibilities of all acting parties.

SLOVENIA

No.

No.

No.

No.

SWEDEN

SRAs view is that the ROSATTE infrastructure must become a part of an INSPIRE infrastructure. By adopting this view SRA can see no problem integrating the ROSATTE infrastructure as it will be a part of both the national and European SDI.

Seems OK - can't see any important entities missing.

Seems OK - can't see any important roles missing.

Seems OK - can't see any major important use cases missing.

SRA consider the ROSATTE infrastructure as a part of both the national and European SDI and can't see no major technical difficulties.

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

The interaction requirements between the ROSATTE infrastructure and the databases are currently not known, as there are no arrangements in place to supply data. However, ISO standards are in use for data storing and data exchange and all data storing systems use the latest software technology.

In principle, the entities identified in document D1.2 Requirements and Overall Architecture pages 23 to 26 are relevant to Scotland.

The roles of Data Provider and Data Store Operator for the road database are likely to be carried out by external service providers under tender to Transport Scotland and they would be required to carry out these roles to the standards and specifications laid down by Transport Scotland. It would be for Transport Scotland on behalf of Scottish Ministers to manage how and by whom the data are used.

Figs 4, 5 and 9 (of D1.2) do not accurately reflect the situation in Scotland (see b above). The role of "Discovery service operator" is one that would be carried out by the Operating Companies, for the routes that they are contracted to maintain and operate, and by the DBFO franchise holders. Integration systems between the relevant parties would need to be developed. The figures within document D1.2 Requirements and Overall would form a suitable starting point for system development.

Not known currently.

One issue that would need to be addressed is how the ROSATTE requirements may relate to the Transport Scotland Asset Management requirements, which would take precedence when there are opposing requirements, and how any conflicts between opposing requirements would be resolved. As noted in reply to question 1 above, there are a number of modules for specialised elements within the asset management database which assist with road management and maintenance. It may be possible to accommodate the ROSATTE requirements similarly and along lines of Section 2.4 of Deliverable D1.1 State of the Art, but that would have to be determined.

UNITED KINGDOM - London

These are relevant and seem comprehensive enough for now

These seem relevant

These seem relevant

Conversion from OS and derived data issues. See q2.

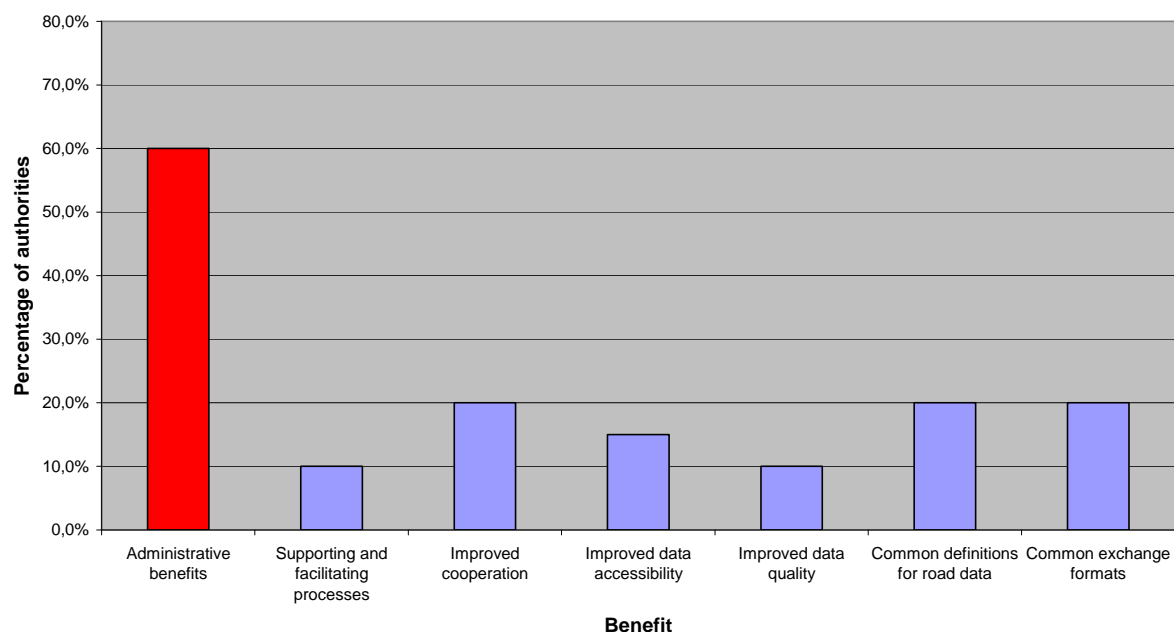
What would be the main benefits and draw-backs of such an infrastructure?

Administrative benefits and draw-backs?

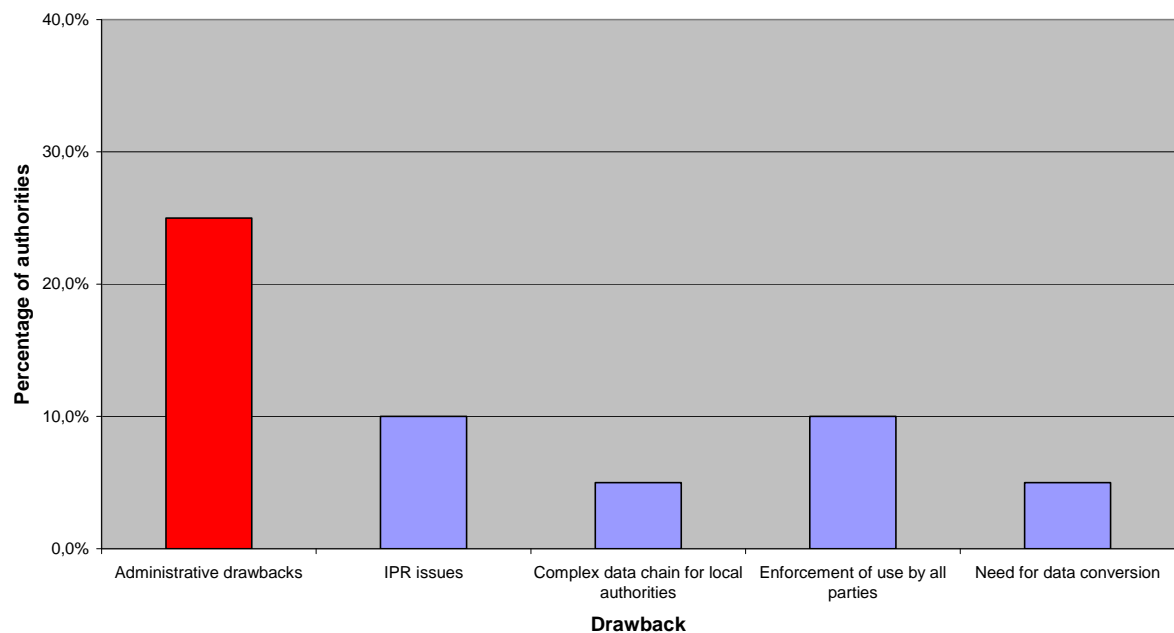
Financial benefits and costs?

Social benefits?

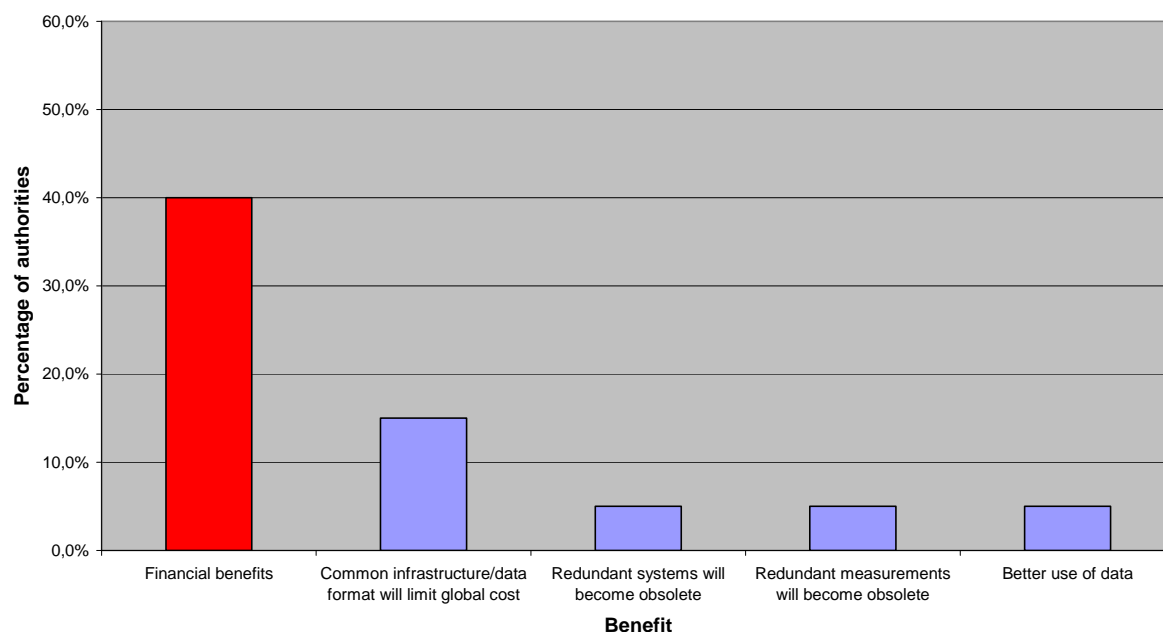
Administrative benefits



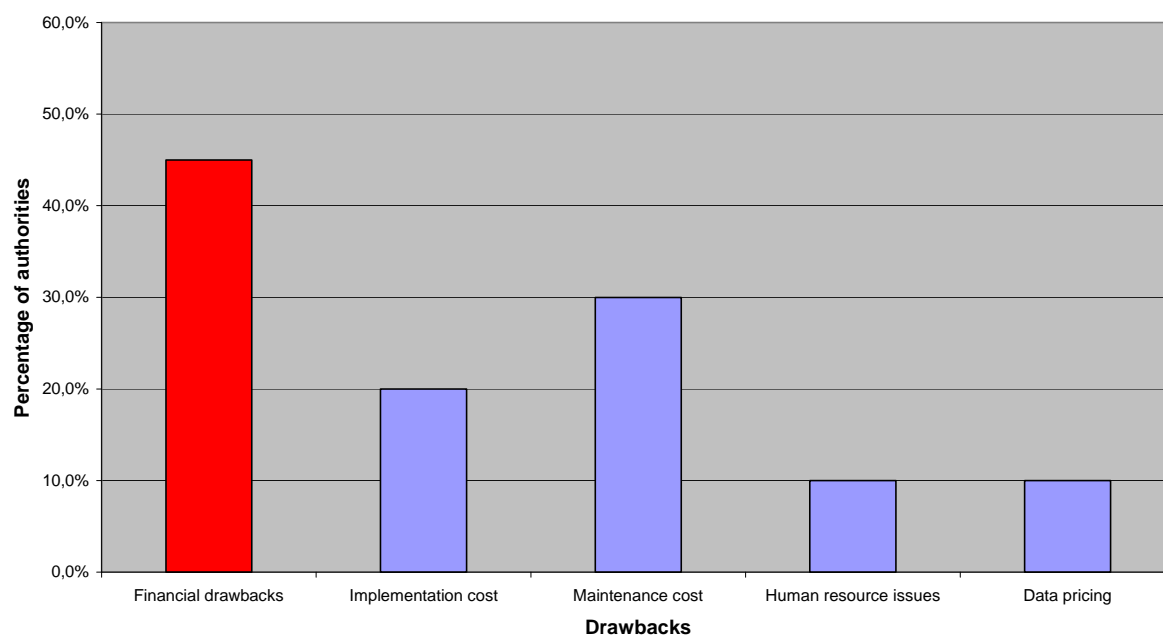
Administrative drawbacks



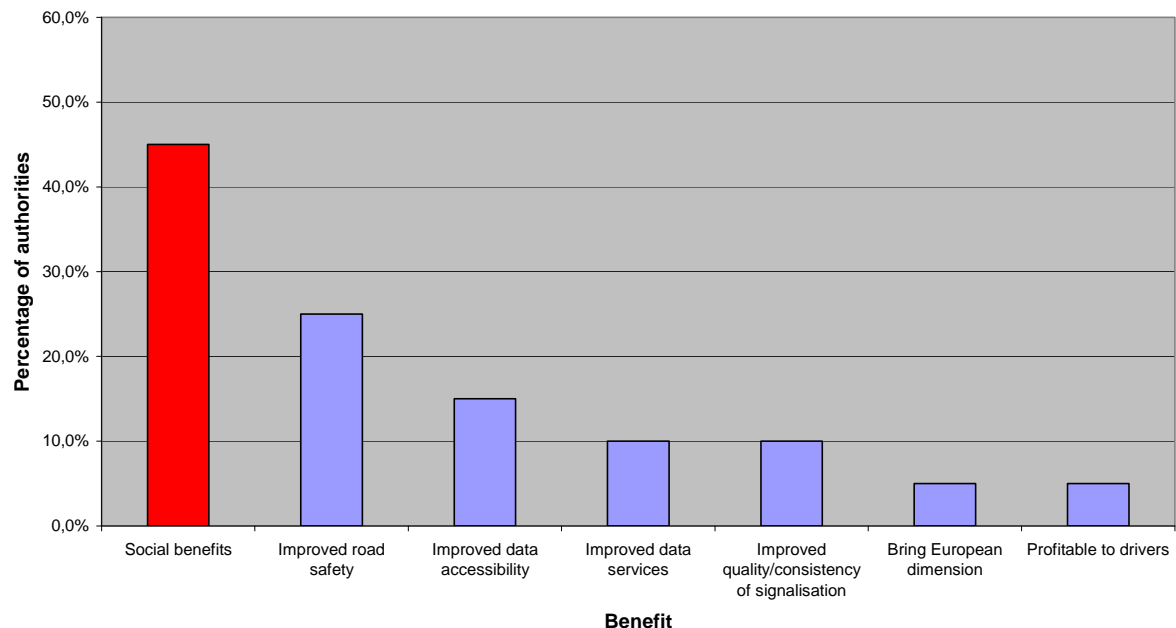
Financial benefits



Financial drawbacks



Social benefits



BELGIUM - Flanders

Administrative benefits:

Supporting and facilitating processes

Maintenance and reparation;

Design;

Management;

Traffic Management (detours, road works, re-routings, ...);

To establish and maintain a coherent signalisation in order to obtain an optimal traffic flow
Readable arrangement of the road and the surrounding area in order to increase traffic safety

Follow-up of contracts (guarantee, delivery and placing);

Drawing up and control 'Supplementary regulations' ('Aanvullende Reglementen)

Providing basic data

Traffic guidance (signposting, route planning);

Speed maps;

Intelligent Transport Systems (ITS) systems like GPS, ISA, ...;

Correlation parameters (accident analysis);

Asset management,

...

Financial benefits and costs.

Financial benefits: Different recordings and movements are made superfluous.

Costs: cost of the implementation project + the maintenance costs

Social benefits:

Improvement of the policy functioning due to a better accessibility of the data

Improvement of the quality and the consistency of the signalisation

Integration of traffic sign data in applications of map makers

Improvement of traffic safety, traffic fluidity, traffic liveability, ... by integrating the traffic sign data for various road users in GPS

Avoidance of trough traffic by taking into account traffic signalisation plans

Avoidance of trough traffic by taking into account height, width and weight limitations
Avoidance of heavy traffic in town centres
Better speed harmonisation - variable speed
Better parking management

BELGIUM - Wallonia

The benefit is an optimized road network management, in broad sense of course
administrative benefits (computerization the current paper procedure, easier check : signalisation consistence, signs location)
financial benefits on long term
social benefits

CYPRUS

All of the above apply for the Cyprus case in terms of benefits gained from such an infrastructure. However, cost and human resources issues can be considered as drawbacks.

DENMARK

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FINLAND

Based on the Rosatte Deliverable D1.2 it is not possible to answer all of the above questions.

FRANCE

French Ministry

Advantages: a common infrastructure implies a uniform process for collecting and defining speed limits and other safety attributes. This must be flexible enough to fit the different national policy to make decision on speed limits and other road signs.

Drawback: if it does not fit the national legal framework making it difficult to use, it will not be used.

Such a common infrastructure may contribute to limit the global cost of setting up and maintaining a national database, although the main costs are human costs (not impacted by the commonality of the infrastructure).

Better understanding and better respect of speed limits and other safety attributes, which will contribute to road safety improvement.

ASFA

Advantages: a common infrastructure implies a uniform process for collecting and defining speed limits and other safety attributes. This must be flexible enough to fit the different national policy to make decision on speed limits and other road signs.

Business model to be defined depending on the market needs.

Social benefits:

Will be profitable to the drivers;

Bring a European dimension;

Data are qualified.

GERMANY - Bavaria

Access to safety relevant attributes for the everyday work, structured database for the analysis road signs

Costs will come up for initial supply and maintenance of the system. Benefits can be achieved if the system is implemented as the standard system and redundant systems are obsolete

Supply of information to the driver to improve road safety.

GERMANY - Mecklenburg-Vorpommern

According to us an improved cooperation of all stakeholders will have a positive effect on decision making on a supra-regional and nationwide level.

See above.

GERMANY - North Rhine-Westphalia

Support of efforts on compatibility of regional and local administrative road data.

Each new requirement has its draw-back due to decreasing state budgets.

Existing activities for improvement of road safety are supported.

ICELAND

N/A

N/A

N/A

IRELAND

From the road authority's point of view it is not obvious where the benefits lay on either the financial or administrative fronts. Hopefully the social benefits would result from a reduction in the number of fatal and serious injury collisions for the user of in-car navigation and safety equipment.

ITALY

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LITHUANIA

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NORWAY

Easy distribution of updated data will mean benefits both for the users and for the data suppliers (public authorities).

Draw-backs will be IPR issues and data pricing.

SLOVAKIA

Quality of data and data services.

SLOVENIA

N/A.

N/A.

N/A.

SWEDEN

Benefits:

Common definitions for road data.

Common exchange formats.

Draw-backs:

Complex data chain from local authorities to ROSATTE data store operator.

Benefits:

Better use of data collected using public funding.

Costs:

May cause problems financially in the long run. Requires a solid business model.

Better cooperation between actors contributing to the data chain.

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

Providing a common method and standard can be agreed for recording and provision of data.

the Administrative benefits would be a uniform standard that all would require to follow, including newcomers to the market, but which may become a restrictive drawback if there are new hardware or software developments for data handling and communication or one party (an information provider?) decides it wants to pursue a different approach or method of providing information (ie it could stifle development);

financially there would be economy when data sets could be provided to a set of pre-agreed formats, (but a drawback with unnecessary expenditure if the information providers do not require data for the complete network - eg the remote areas are often mapped in less detail - or from all the countries). (Would there be an opt out facility?)

Not known currently.

UNITED KINGDOM - London

Administrative benefits and drawbacks

Providing road safety info (speed limits) to a wide variety of users could benefit road safety in London

Better pan European communication re: road safety data

Extra work/time/cost associated with maintaining an extra database/store

The need for conversion and possible IPR issues

Financial benefits and costs

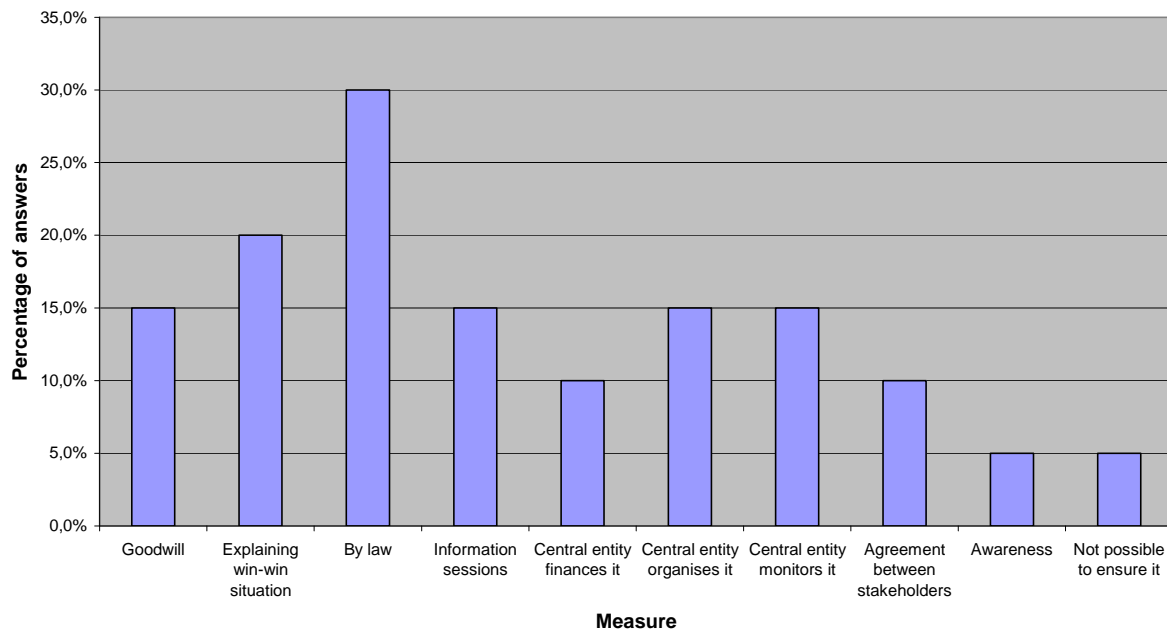
Project will assist us in realising best practice for creating and storing road safety attributes, thus saving financial outlay in trying to ascertain on our own

Time costs of maintaining additional data store

Improved availability of road safety information to users

In your country/region, how would you ensure commitment of all stakeholders necessary for collecting, sharing and updating road safety attribute information

How to ensure commitment of all stakeholders



BELGIUM - Flanders

The collection of the road safety attributes in the whole of Flanders is financed, organised and monitored by the Flemish government.

Information sessions are organised to ensure commitment of the different authorities to keep the road databases up to date. The advantages of the existence of an up to data road database are used to ensure this commitment. So, in fact, one trusts on the goodwill of the different road authorities.

BELGIUM - Wallonia

A convention or a decree.

CYPRUS

Our response to question 16e is relevant.

DENMARK

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FINLAND

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FRANCE

French Ministry

Since there is at the moment no obligation, the only possibility is to communicate and convince with a clear win-win cooperation framework.

ASFA

For motorway companies, ASFA would design an entity responsible for collecting, sharing and updating road safety attributes in each motorway company.

GERMANY - Bavaria

For the subordinate administrations of the Government of Bavaria, this can be done with the use of direct orders, for all others it is based on goodwill.

GERMANY - Mecklenburg-Vorpommern

The necessary commitment of all stakeholders has to be ensured by the responsible authority. (see under Q. 5).

GERMANY - North Rhine-Westphalia

Due to the principles of local self-government the Transport Ministry has no mandate to ensure commitments of stakeholders on local level. National local-authorities umbrella organizations (German County Association, German Association of cities, German Local Authorities Association) must be addressed.

ICELAND

The Icelandic Road Administration takes care of collecting data for the national road system.

IRELAND

Without sufficient resources this programme will have to be conducted on an informal basis. Therefore it will be reliant on the stakeholders buy in to the ROSATTE concept that will determine its likely success.

ITALY

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LITHUANIA

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NORWAY

There is no strong business model to ensure this for all safety attributes. We must therefore either work with the awareness or make swift updates a mandatory process or (most likely) do what they do in Sweden, no (safety attributes) regulation will be valid until it is stored electronically and ready to be issued from a central repository.

On the other hand we do already have cooperation between several public authorities concerning digital mapping. This cooperation is based on a white paper called "Digital Norway". As a result of this, speed limit is a dataset that should be updated according to the agreement between the participating members.

SLOVAKIA

The Slovak Road Administration performs on its own the data collection, updating, storage and data service for central road database - for data quality increasing we need to implement the new data collection technology (mobile mapping based), effective road administrators cooperation (in data updating process), including of municipal roads and building a metadata system.

SLOVENIA

It can not be ensured.

SWEDEN

As there is a law in Sweden prescribing that all traffic regulations must be delivered to the national database of traffic regulations (RDT) - and the RDT database is operated by SRA - this problem has already been solved.

UNITED KINGDOM - Northern Ireland

Not answerable.

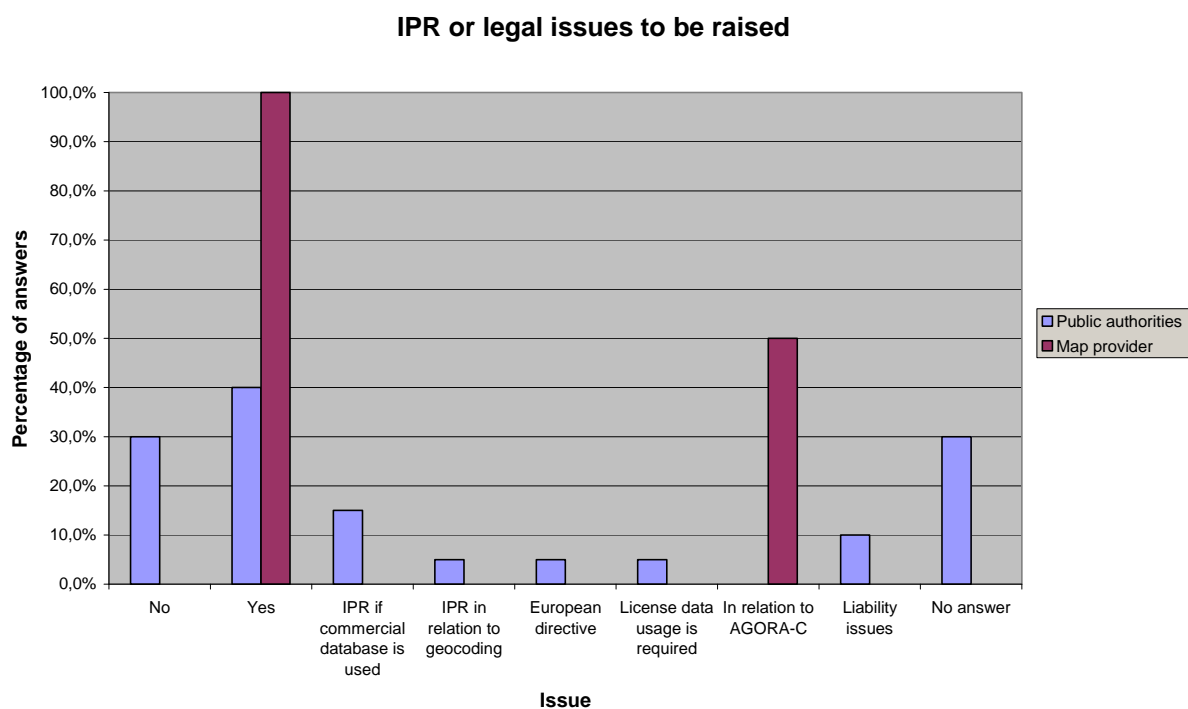
UNITED KINGDOM - Scotland

Through SCOTS (Society of Chief Officers of Transportation in Scotland), UK Roads Board

UNITED KINGDOM - London

We would need to show that this would be mutually beneficial. Ideally we would also get the Department for Transport (DfT) to mandate it, but this is not guaranteed.

Do you expect any IPR or legal issues to be raised?



BELGIUM - Flanders

No.

BELGIUM - Wallonia

Yes.

CYPRUS

No.

DENMARK

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FINLAND

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FRANCE

French Ministry + ASFA

The IPRs include two kinds of rights (European directive of 1996 - 96/9/CE):

designer's rights (database design);

producer's rights (including the mapmakers' data and the content providers "speed limits").

The main issues are about data that is actually produced and exchanged.

They are at two levels:

1- during the database setup: if a commercial map database (from the A vendor) is used for setting up the speed limit database (speed limit data) one can imagine restrictions due to IPR to delivery the produced data to another mapmaker.

2- geocoding: if a commercial map database (from the vendor A) is used for geocoding the speed limit sections there are IPR (copyright) when distributing the corresponding produced files to other mapmakers. The raised argument is "to avoid the third parties to rebuild the mapmaker's products used totally or partly". Such production can be seen as composite work including IPR from the mapmaker and from the data producer.

In France IGN defines composite work above 10 km² (large-scale) or 100 km² (medium-scale / small-scale) of covered area.

There is an obvious link with the business model of the different actors (see §6). The rules defined for IPR must be tempered by other regulations about public data (European directive 2003/98/CE).

French Ministry

Regarding legal issues three different aspects have to be considered:

Obligation for the different road authorities / operators to communicate information on safety attributes for the network operated. There is currently no leverage for creating such an obligation. One can expect the future ITS directive could modify the current situation;

Responsibility for PA: the different road administrations / operators do not want to risk having their responsibility challenged in case of inaccuracy, lack or discordance with reality. This might imply to block any willingness to communicate such data. Any modification in the future would have to be previously and carefully assessed.

Responsibility for drivers: the different Codes of Highways state drivers remain responsible for observing road signs. In short/medium It does not seem to be possible to change this statement and in particular to lower their responsibility if their device gives erroneous indications (e.g. in case of enforcement).

GERMANY - Bavaria

No.

GERMANY - Mecklenburg-Vorpommern

We expect to face difficulties with respect to contractual exploitation rights, intellectual property rights and liability issues.

GERMANY - North Rhine-Westphalia

Yes, e.g. European directive, adopted into national law.

ICELAND

See reply to question 6.

IRELAND

Yes.

ITALY

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LITHUANIA

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NORWAY

No, the public authorities own the data, and it will be in their interest to issue the data. It might be raised IPR issues if data from Tele Atlas and Navteq are used (also when getting feedback or data corrections from them)?

SLOVAKIA

IPR/Intellectual property rights - their use should be specified by agreement: licensed data usage.

SLOVENIA

It can not be determined.

SWEDEN

No - for the moment SRA can't expect any IPR or legal issues to be raised.

UNITED KINGDOM - Northern Ireland

Not answerable.

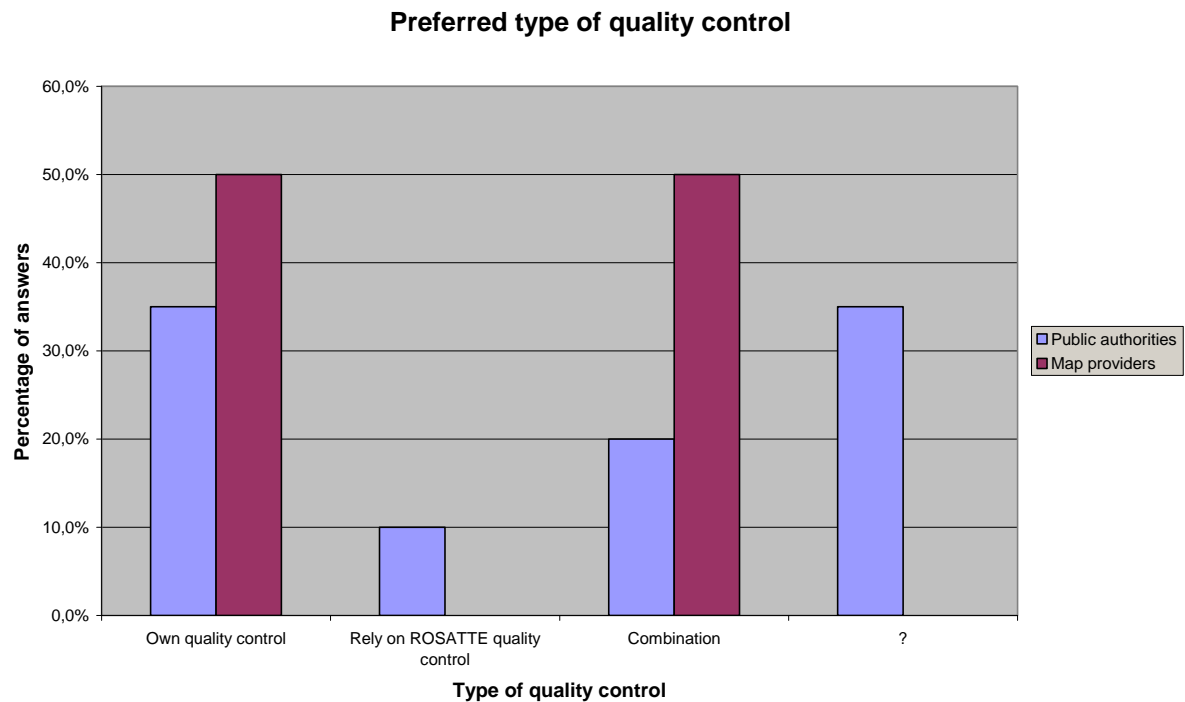
UNITED KINGDOM - Scotland

Scottish Government and Transport Scotland mapping requirements are covered by a legal agreement with the UK Ordnance Survey which allows for the sharing of data under tightly controlled circumstances.

UNITED KINGDOM - London

Possibly with OS regards derived data. We own the speed limit signs (points), they own the speed limits links or roads (lines)

Would you rely on a ROSATTE quality control or would you carry out your own quality control?



BELGIUM - Flanders

Not decided yet. Probably carry out own quality control.

BELGIUM - Wallonia

It's too early to answer this question.

CYPRUS

This is something we need to discuss internally however our first reaction is that we will probably rely on ROSATTE quality control.

DENMARK

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FINLAND

Own quality control will continue any way.

FRANCE

French Ministry

ROSATTE quality control if it seems to be sufficient. However, it should be completed by some in-site verifications (esp. when updating). Another part could be brought when assessing feedbacks.

ASFA

We would better rely on a ROSATTE quality control.

GERMANY - Bavaria

Both would run in parallel as there will be an internal quality assurance system anyway.

GERMANY - Mecklenburg-Vorpommern

The decision would depend on the duties and responsibilities as well as the competency of the quality control.

GERMANY - North Rhine-Westphalia

Own quality control

ICELAND

The Icelandic Road Administration relies on its own quality control for its own data.

IRELAND

This is related to A8 part c. Quality control is best tackled at the data collection source. However without detailed metadata how can quality be assessed?

ITALY

We would first expect a quality control from the single supplier, who's responsible for the given data(data distributed by ROSATTE but not provided by ANAS), but it would be anyway desirable a ROSATTE control on the whole data.

LITHUANIA

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NORWAY

We have today our own procedures for quality control of data that will be used. Many of these controls are more or less automatic. We feel that for the moment it is not quite clear what a ROSATTE quality control would be.

SLOVAKIA

We would prefer own quality control.

SLOVENIA

N/A.

SWEDEN

Handling of traffic regulations in Sweden will establish its own quality control process.

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

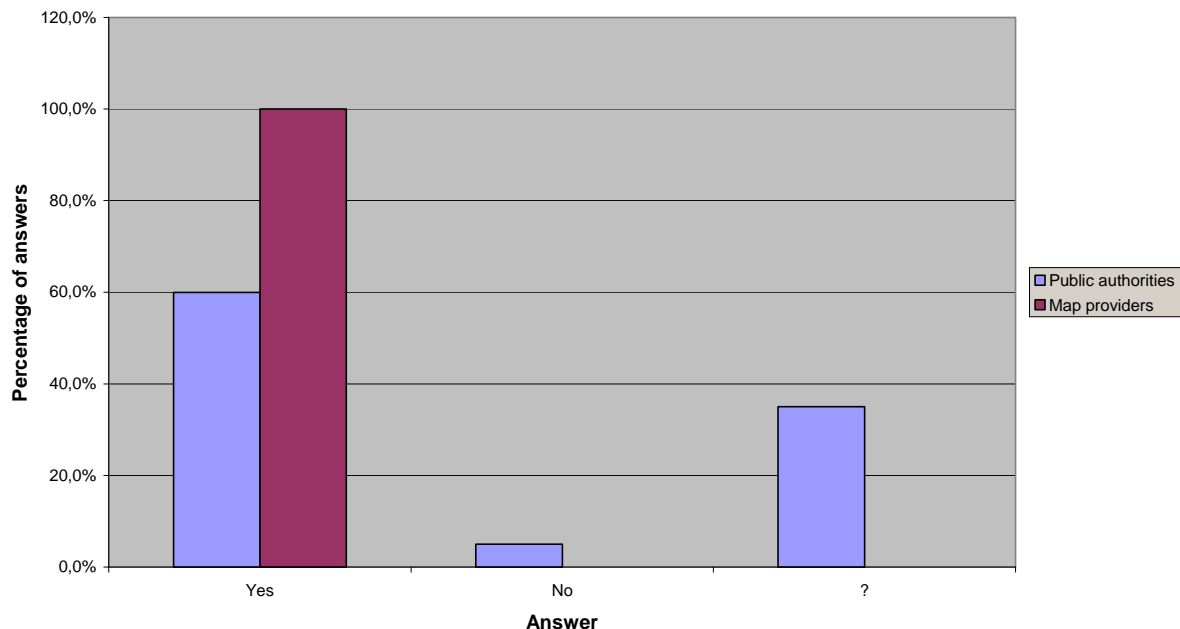
The data supply and verification would have to conform with a quality process, whether NRA or ROSATTE.

UNITED KINGDOM - London

We have our own, but would be interested in combining it with the ROSATTE quality control.

Would it be easier for you to implement the ROSATTE infrastructure if the tools and formats developed within the ROSATTE project would be standardised?

Standardised tools and formats in ROSATTE



BELGIUM - Flanders

We think that it could be beneficial to consider the standardisation/certification of the dataflow from authorities to map providers (exchange format).

BELGIUM - Wallonia

Yes, probably.

CYPRUS

Yes, it would be easier to obtain technical details of different systems used within the EU Member States prior to finalizing the ROSATTE Infrastructure, for example Cyprus uses an SQL Server System, will this be easily compatible with other systems?

DENMARK

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FINLAND

Based on the Rosatte Deliverable D1.2 it is not possible to answer all of the above questions.

FRANCE

French Ministry

Yes it may make such an implementation easier as a principle. However when implementing some standards (cf. AGORA-C aka IS 17572-3), it becomes very difficult to fully observe such standards.

ASFA

It would be really easier.

GERMANY - Bavaria

Yes, that would help.

GERMANY - Mecklenburg-Vorpommern

Yes.

GERMANY - North Rhine-Westphalia

NWSIB architecture is consequently based on established standards with technical and organisational integration in geospatial and traffic information infrastructures, as they are currently under development. We highly recommend the integration of ROSATTE in existing SDI infrastructures initiatives with legal status (INSPIRE). The success of a separate infrastructure exclusively for road safety attributes is doubted.

ICELAND

N/A

IRELAND

No I don't believe so. From working on EuroRAP projects where there is no requirement for data standardisation only conformance to a methodology participants are free to devote their limited resources to delivering the results.

ITALY

Yes.

LITHUANIA

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NORWAY

Yes. It's still likely that the tools will have to be customised to fit the local customs and processes. The formats should be the same.

SLOVAKIA

Yes.

SLOVENIA

N/A.

SWEDEN

YES.

Data exchange should, as far as possible, be based on existing standards.

Use of standards/certification is probably a basic condition to secure (quality assurance) the data exchange between public authorities and commercial map providers.

To increase the quality and usefulness of data there is also a need to harmonise existing data definitions in the national databases.

UNITED KINGDOM - Northern Ireland

Not answerable.

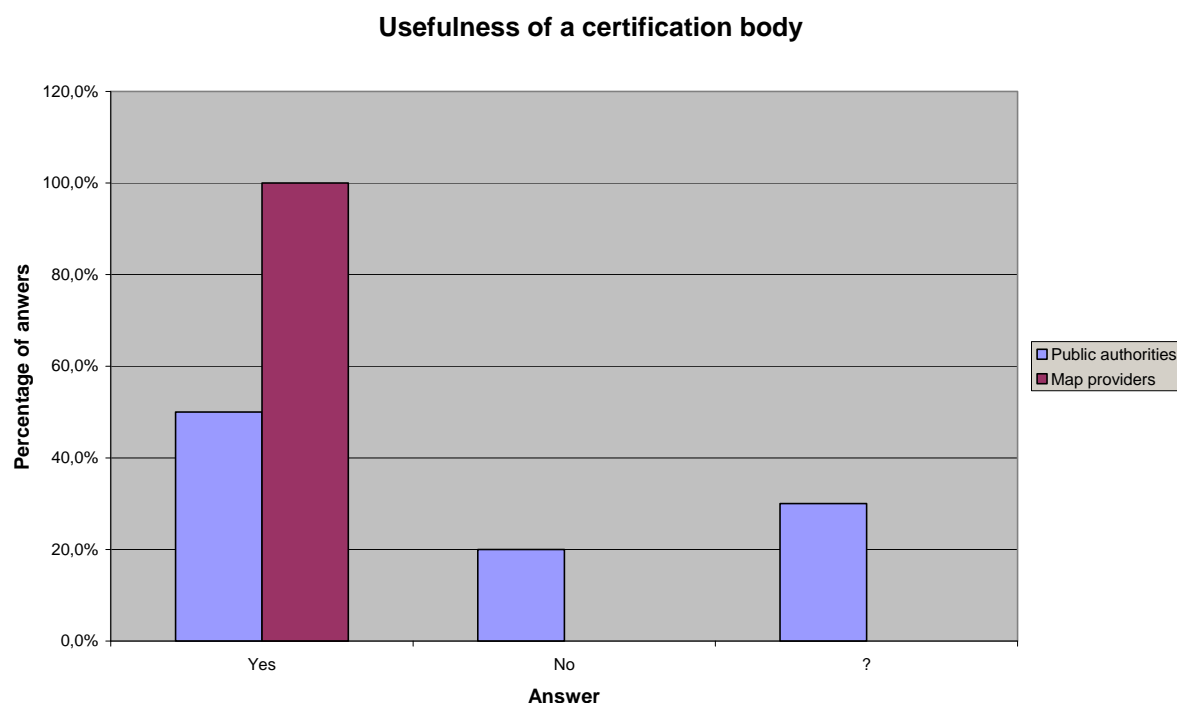
UNITED KINGDOM - Scotland

Without knowing details, it is not possible to respond fully on this question. There would be costs involved and possible difficulties if any extensive changes in format of the asset management data were to be required.

UNITED KINGDOM - London

Yes.

Would you consider the creation of a "certification body" useful in order to ensure that the ROSATTE infrastructure, tools and mechanisms are run properly?



BELGIUM - Flanders

Yes.

BELGIUM - Wallonia

Yes, it's absolutely necessary.

CYPRUS

More information is needed in order to reply to this question.

DENMARK

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FINLAND

Based on the Rosatte Deliverable D1.2 it is not possible to answer all of the above questions.

FRANCE

French Ministry

First of all, the consequences in term of responsibility are to define.

An important question is to define the aims of such certification and the quality criteria about what is of good or bad quality in space and time.

Therefore, we are rather reluctant for having such body that only tackles some issues. For us the main issue is to define and bracket the time between the event creation (regulation) and its input in the database. Useful but not a priority. Other processes can be considered like self-certification e.g.

ASFA

We are rather reluctant for having such body that only tackles some issues. For us the main issue is to define and bracket the time between the event creation (regulation) and its input in the database. Useful but not a priority. Other processes can be considered like self-certification e.g.

GERMANY - Bavaria

An independent body for that would be very useful.

GERMANY - Mecklenburg-Vorpommern

Currently, the creation of such a certification body is not deemed necessary.

GERMANY - North Rhine-Westphalia

Yes.

ICELAND

N/A.

IRELAND

No.

ITALY

Yes.

LITHUANIA

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NORWAY

It is important is that the data fulfil demands concerning the format, the product specifications and the quality. However we are sceptical to a centralized certification body.

SLOVAKIA

Yes.

SLOVENIA

No.

SWEDEN

The ROSATTE infrastructure must become a part of an INSPIRE infrastructure. For the infrastructure and the ROSATTE specific tools there may be a need of a "certification body". For the mechanisms (technique, process, personal) there is certainly a need for "certification", like ISO 9000, to assure the expected quality of information and data flow.

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

A certification body would ensure the integrity of the ROSATTE infrastructure, tools and mechanisms.

UNITED KINGDOM - London

Yes.

How would the ROSATTE infrastructure improve your position and capability towards data collection, exchange and information update?

BELGIUM - Flanders

The ROSATTE infrastructure should reduce the delay between an update in the traffic sign database of a public authority and the moment at which this update is available in a car. Reducing this delay will be beneficial for traffic safety and traffic liveability.

BELGIUM - Wallonia

ROSATTE can give a stimulus and outlines to develop road safety attributes database.

CYPRUS

Our current system is considered satisfactory for our needs. However, ROSATTE infrastructure could be more user friendly. In regards to access to information so far there has only been exchange of information for traffic safety/accident data through the CARE program.

DENMARK

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FINLAND

Based on the Rosatte Deliverable D1.2 it is not possible to answer all of the above questions.

FRANCE

French Ministry + ASFA

It seems more to be a target (incentive) for setting up and feeding such database. Moreover, it allows defining a common solution that one can expect widely used. We can expect a positive feedback from the other actors outside the ROSATTE project. The question of providing services back to the data producer is crucial to obtain their adhesion.

GERMANY - Bavaria

I would make it easier to justify an initial data capturing, if it is sure that the data will not only be used for internal purposes but also for the supply towards externals.

GERMANY - Mecklenburg-Vorpommern

Our position might be improved with respect to speeding up the collection of data from other stakeholders.

GERMANY - North Rhine-Westphalia

Data requirements on European level only improve the position of regional and local data management tasks, if they are based on legal issues.

ICELAND

N/A.

IRELAND

Again with reference to A8 I believe the major change in how road authorities collect and manage their data will come from initiatives like SDIs and INSPIRE not ROSATTE. Therefore conformance to ROSATTE will potentially hinder, because of resource issues, delivery of these other spatial programmes.

ITALY

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LITHUANIA

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NORWAY

We will get increased focus on data and data quality and better comprehension for increased resources to this kind of work. We might also get feed back on data quality and corrections to the data from the map providers and end-users.

SLOVAKIA

Positive impact of our system will be reached only when the ROSATTE is implemented in EU and then transposed in our law (e.g. INSPIRE).

SLOVENIA

N/A.

SWEDEN

The ROSATTE infrastructure must become a part of an INSPIRE infrastructure. For the infrastructure and the ROSATTE specific tools there may be a need of a "certification body". For the mechanisms (technique, process, personal) there is certainly a need for "certification", like ISO 9000, to assure the expected quality of information and data flow.

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

There would probably be no significant alteration to Transport Scotland's position or capability for data collection apart from any additional requirements to obtain data which is not currently recorded. The exchange of data would be additional to current commitments.

UNITED KINGDOM - London

As we already collect data, the main improvements would be in exchange with other organisations.

If the ROSATTE infrastructure would be available tomorrow, how would you proceed to implement it in your country?

How much time would you expect before implementing it in your country/region?

When do you expect it to be up and running?

What kind of measures would you need to take before it can be fully implemented?

Which actors need to be involved in setting up such a data chain?

Which recommendations would you take to increase awareness of involved stakeholders on their respective roles and responsibilities?

BELGIUM - Flanders

Since the Flemish government is a partner in the ROSATTE project, the ROSATTE infrastructure will be implemented in the framework of the ROSATTE test site. The preparation work for the test site will take about 4 months.

See answer to 16a).

The traffic sign information of the Flemish government need to be converted to the data model described in deliverable D3.1 of the ROSATTE project. An AGORA encoding needs to be performed.

Flemish government (regional authority), municipalities and map providers.

Most of these stakeholders are involved in the ROSATTE project. So they are aware of their responsibilities.

BELGIUM - Wallonia

2 years.

3 years.

A convention or a decree to lay down rules of users and entities.

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CYPRUS

About 6-12 months

Depending on various factors such as available human resources and any costs associated

We would need to ensure that technical support and human resources are available

Public Works Department, Cyprus Police, Municipalities, Districts and the Department of Information Technology Services of the Cyprus Government

Our recommendation is that stakeholders have to be informed promptly regarding the details required for the ROSATTE Infrastructure to be successful. As far as Cyprus is concerned this is planned to be implemented through an Info Day during which stakeholders will be invited in order to be informed and made aware of their roles and responsibilities for this initiative.

DENMARK

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FINLAND

Based on the Rosatte Deliverable D1.2 it is not possible to answer all of the above questions.

FRANCE

French Ministry

Not planned yet. The BALI project is supposed to contribute together with ROSATTE to make this kind of decision.

One can expect to have some follow-up for the non-conceded road network rather soon. This element is a part of the evaluation to be led prior to it. For the other parts of networks, it mainly depends of the political willingness to launch. Depending of the solutions adopted and the targets, 6 months to two years may be necessary.

National law and communication actions are the minimum. It is necessary to define more attractive returns for the local authorities that would facilitate adhesion (win-win cooperation).

Presidents of département (# county)(100) and mayors (36 600). Need to clarify role of the national mapping agency (IGN) and the obligations for the other road operators incl. motorway companies. Need to define which actor has to manage / operate the central database.

To communicate and convince what this database will bring (see 10)

ASFA

It could be rather fast for motorway companies, but it should be much slower if each of the 36,600 communities has to implement it.

Motorway companies would need at least a year to be fully ready, starting from the time when it is available.

We would qualify the existent local database and adapt exchange formats to Rosatte exchange formats.

For motorway companies: all motorway companies have to be involved and have to find persons in charge to drive this activity in each motorway company.

We would take recommendations about the responsibility toward a driver and police authority to provide a conform data, particularly concerning speed limit data. A person in charge would be designed to maintain the local database in each motorway company, using tools provided for feedbacks.

GERMANY - Bavaria

It would be easy to start delivering existing data, but the permanent data supply will have to start with pilot regions.

First pilots could run within several weeks, a regular operation would take several months

Implement tools at involved authorities, adapt system environment

All responsible administrations and involved partners in traffic ordering, operators of the road database, operator of the ROSATTE infrastructure, commercial partners

Spread the message of potential benefits towards the administration and the citizens.

GERMANY - Mecklenburg-Vorpommern

1. Interdepartmental implementation

2. Development of a job catalogue

3. Coordination of the Collaboration of the different stakeholders.

At this stage we are not in a position to estimate the considerable time needed for the introduction of ROSTATE.

GERMANY - North Rhine-Westphalia

No statements possible yet.

ICELAND

N/A.

IRELAND

It obvious for the previous answers above that Ireland would have issues setting up the necessary infrastructures. Our primary focus will be on complying with the EU INSPIRE directive as well as other EU road related Directives (e.g. Noise Mapping). In a wider con-

text we will continue to participate with EuroRAP and provide the road user information of the road collision risks as well as rating the national network in terms of road protection.

ITALY

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LITHUANIA

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NORWAY

We think that this has to be coordinated with the implementation of the INSPIRE infrastructure. Today we have a national portal up and running, but there are still some services that need to be set up according to the ROSATTE infrastructure (AGORA encoding etc).

Norwegian Mapping Authority is responsible for the portal, and as we are cooperating with them to collect safety attributes on the municipal roads and private roads, we think that using the same portal will be the best solution.

It is difficult to say when such a infrastructure will be up and running in a production environment.

SLOVAKIA

In relation with previous answer we would subsequently need the national project which would define all the necessary steps, measures, etc. to be able to implement such a structure.

SLOVENIA

N/A.

N/A.

N/A.

N/A.

N/A.

SWEDEN

As SRA consider the ROSATTE infrastructure as a part of an INSPIRE infrastructure we see no problem implementing the ROSATTE infrastructure as it will be a part of already planned work to implement both the national and European SDI.

6-12 months.

12-24 months.

Non other than is already identified as needed to implement both the national and European SDI.

Municipal authorities (290), County administrative boards (21), SRA (7 regions), Local Swedish police authorities (21 districts).

If the ROSATTE infrastructure is seen as a part of INSPIRE we can rely on the law.

It is also important to establish agreements between all actors concerned.

UNITED KINGDOM - Northern Ireland

Not answerable.

UNITED KINGDOM - Scotland

Not known at present. In principle, participation would be possible on authorisation of the Transport Scotland Board without any additional permissions required. However, Transport Scotland's internal requirements, competing pressures and priorities and the financial con-

siderations would significantly influence the time taken to implement the ROSATTE infrastructure.

UNITED KINGDOM - London

A few months

Depending on our IT dept, as soon as possible

We would need to convince our IT dept that it was a good idea. NOT an easy task ! We also need to get our own system up and running

Ourselves (TfL), the DfT (preferably), possibly OS ?, other map providers

Good communication would be essential. Meetings and clearly defined roles and responsibilities would be important.

2.2 Map providers

According to you, what are the main technical and organisational barrier(s) to the deployment of such an infrastructure in the different EU countries?

TeleAtlas

information not available in a homogenous coverage and quality

local content deviations

no data exchange formats standardized

unclear contract models and pricing

IP ownership of derived data

to many local authorities leading to high co-operation efforts

Navteq

Organizational: Getting agreement of formats in 27 EU countries.

Technical: We expect no barriers here. NAVTEQ has quite some experience in receiving and handling many different kinds of data formats. We have a special Digital Data Team to handle these issues.

Legal: Is not mentioned here but based on our experience there will be countries/organizations, which will have problems with the privacy of data.

Do you already have experience in receiving attributes data from public authorities or road operators?

How was the data exchanged? What difficulties were encountered?

Under which conditions? What there a pre-existing contract? Did you have to pay for it?

TeleAtlas

Yes.

- raster maps

paper maps

analogue construction plans

digital vector data

text description

ascii-records

In general, everything what is theoretically possible exists except direct online access / WMS.

Main difficulties are for paper documents/raster data that we are confronted with digitizing costs (no import options).

For digital data main problems are twofold:

deviating data specifications, a 1:1 translation table is often not possible

matching between source data and own map data sufficient. Common reference methods of ID's do not exist.

Payment conditions are completely inhomogenous - without contract and cost, without contract but certain cost per material, with contract but for free, with contract and with fixed cost per material or effort, with contract and with license fees, with contract but without disengagement options because of IP regulations.

Navteq

Yes.

Data exchange with all different kinds of formats. Main difficulty was to get all these formats fit for use in the NAVTEQ proprietary SW. Therefore a special team, which still exists, has been established.

All different kinds of conditions. E.g. with respect to payment of royalties, etc. NAVTEQ always tried to have a contract. Was also different per country and based on the business model of paying royalties. In most cases NAVTEQ wanted to pay for it to avoid problems in the future when NAVTEQ would become profitable.

As a map provider, would you be ready to pay and/or put efforts for setting up and implementing a ROSATTE data store in the different EU countries? Or do you expect any other party to pay and/or put effort for it?

TeleAtlas

This is a business case related question. The expected benefits would need to be valued and compared with other potential updating models & sources. This is also a question of timing: when could this happen? The competitive sourcing landscape is quite dynamic. But in general it should be in the interest of the EU to have sufficiently high quality data in the market in order to efficiently manage traffic to improve traffic safety and efficiency.

Navteq

NAVTEQ will put efforts in place to set up a data store and is also willing to pay to a certain extent (should definitely not be more than what has been paid up till now).

It would be nice when also other companies could contribute.

What is your motivation for participating in setting up a ROSATTE infrastructure across Europe?

TeleAtlas

As a replacement of existing local suppliers with inhomogenous data and formats.

Navteq

- 1) Obtain up-to-date safety attribute information, which will be supplied directly to users.
- 2) Saving NAVTEQ time and expenses in the future as the data exchange will be more structured.

Do you expect any IPR or legal issues to be raised?

TeleAtlas

Yes, especially in UK. But this could be also critical in other countries / with other suppliers with strict IP regulations.

Navteq

YES, due to the patent pool that exists we expect some IPR obstacles concerning AGORA-C. In addition there will definitely be some countries / authorities that will raise some legal issues, our experience shows that this sometimes needs more time to solve than technical problems. Therefore our proposal is to start with the countries / authorities who will not raise these concerns.

Would you rely on a ROSATTE quality control or would you carry out your own quality control?

TeleAtlas

We would do try to rely on ROSATTE QC but would apply sample checks. Of course initial supplier check would be performed until ROSATTE would receive a status as trusted source.

Navteq

Ideal would be that our Q-control will be implemented as the NAVTEQ Q-control. Both TA and NAVTEQ are ISO TS 16849 certified (highest q-standard of the car industry) and for that reason we have to prove that we do proper supplier management including (incoming) Q-control.

Would it be easier for you to implement the ROSATTE infrastructure if the tools and formats developed within the ROSATTE project would be standardised?

TeleAtlas

Yes.

Navteq

YES. We have at least to come up in the ROSATTE project with strong recommendations in the area of standardization. The experiences in the test sites will give us insight where the priorities for standardization will be.

Would you consider the creation of a "certification body" useful in order to ensure that the ROSATTE infrastructure, tools and mechanisms are run properly?

TeleAtlas

Yes, especially because of our companies QMS requirements and our ISO/TS 16949 certification.

Navteq

YES. See the experiences in the GST IP. The GST sub-project CERTECS provided a complete guide on how to come to a "certification body".

If the ROSATTE infrastructure would be available tomorrow, how would you proceed to implement it?

How much time would you expect before implementing it?

When do you expect it to be up and running?

What kind of measures would you need to take before it can be fully implemented?

Which actors need to be involved in setting up such a data chain?

Which recommendations would you take to increase awareness of involved stakeholders on their respective roles and responsibilities?

TeleAtlas

This cannot be predicted exactly. It will depend on what ROSATTE will be able to provide technically and content wise. The web based technologies for the exchange mechanisms of information (provision & feedback), however, should be implementable in short term.

Not within next two to three years. However, for some road authorities, this could be sooner.

Development of technical interface / validation engine to import data.

Pilot implementation including extended quality checking.

Process release.

Mapping Companies: Data specification, software architects and engineering, contractual framework, local QC inside regions.

ROSATTE: the same, but especially standardization on Terms And Conditions.

If mapping companies run completely independent from road administrations, the intended effects of traffic efficiency/safety will not be realized because navigation users will drive base on the navigation map.

Navteq

Recommended approach: Start with a limited pilot in a few countries. Based on the pilot experience, extend the project. Take the time (it will cost a couple of years) but really try to do it the first time right. Risk of not following this approach will be that countries / authorities will stay away when they see that a big project fails. We have too many of such examples in Europe.

At least 3 years according to the approach above.

At this stage it is a research project which still has one year to go. Once the project is completed, we would still expect another initiative to impose it on European level and to introduce the necessary legal framework, which would take 1-2 years. Once this is put into effect, we expect a rapid implementation on NAVTEQ side.

Make sure that you have upfront the approval AND commitment of some countries/authorities to do the pilot. My experience is that when this is successful others will follow.

Map makers and Public authorities/Road operators.

Explain the project in short and put the emphasis on the benefits and advantages for the respective stakeholders.

APPENDIX 2: Survey on Intellectual Property Rights “MAPPING ROAD SAFETY ATTRIBUTES”

This appendix contains the ROSATTE questionnaire used for the IPR study of July-August 2010 (1) and the full data received (2).

1. *Questionnaire “Mapping Road Safety Attributes”*

ROSATTE project intends to develop infrastructure and supporting tools that will ensure European access to road safety attributes including incremental updates. This infrastructure will facilitate administrative internal functions as well as supply of data to third parties (service providers), e.g. for safety relevant services.

The data flow that is addressed in ROSATTE may be seen as a data chain. The establishment of a ROSATTE infrastructure has a clear benefit for public authorities and road operators through its potential contribution to improving road traffic safety, while giving the industry the opportunity to improve the quality of map databases used in in-vehicle systems and enabling new safety applications that need map data with Europe-wide complete and up-to-date coverage of road safety attributes.

From a technical and organizational perspective, the project ROSATTE is built on a collaborative data workflow which concentrates, qualifies and broadcasts the safety road's attributes. It is therefore imperative to ensure such an arrangement is legally and economically relevant, including being aware of the constraints attached to the flowing data and the databases hosting them.

Several international agreements and European Directives lead to the establishment of intellectual property rights on such data and databases, and consequently built a first set of conditions for their employability¹.

This questionnaire is addressed to the Public Authorities of all EU Member States and aims at the identification of national/regional/local legal peculiarities. Please take the time to reply to the following questions.

Does your local law allow the formation of intellectual property rights on sets of data (i.e. road safety attributes) or databases outside the cases provided by European law?

☐ Yes

☐ No (End questionnaire. Thank you for your answer!)

If it does, please detail by answering the questions below:

What are the conditions (including pricing) to use, disseminate and exploit the data (road safety attributes)?

¹ The Berne Convention for the Protection of Literary and Artistic Works; The European legislation on intellectual property, including, including: Directive 90/313/EEC of 7 June 1990 on the freedom of access to information on the environment; Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data; Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information; EU INSPIRE Directive 2007/2/EC, published April 25, 2007.

Do you, as Public Authority, have a defined business model of how the data (road safety attributes) are made available? If so, please describe it shortly.

How do you handle liability issues in your data supply process? What responsibility rests on your data suppliers (local and regional authorities, etc)?

Have you implemented any certification process to ensure the quality of road safety data in your databases?

Please enclose any documentation or reference available, detailing the IPR issues at national/regional/local level. (The materials can be provided in any language of EU Member States).

Thank you very much in advance for your cooperation!

2. Data collected per country

Question 1. What are the conditions (including pricing) to use, disseminate and exploit the data (road safety attributes)?

Norway Ministry

Data bought from the NPRA (via Norwegian Property, which sells data on behalf of the NPRA) are free to use as the buyer sees fit. Data handed over to a user for free, should only be used for the purpose stated before the handover.

Germany - Mecklenburg-Vorpommern

The road administration of Mecklenburg-Vorpommern does not assume any liability with respect to its data and data bases. Currently, the road administration does exclusively grant usage rights on data for specific purposes on a cases by cases. In such cases the purpose has to be declared in the process of obtaining the usage rights. At this moment the road administration authority does not charge any license fees on the use disseminate and exploit of data. However, the road administration does not exclude that costs could be raised. Third parties could be expected to contribute to the development or maintenance costs of data bases.

Germany - Bavaria

In Bavaria there is a PPP-model with the Free-State of Bavaria and the Traffic Information Agency Bavaria - VIB (consortium of SIEMENS, PTV and others) in place to disseminate all road data including road safety attributes and dynamic traffic information. All these issues have to be negotiated with the VIB.

Portugal

There are not set prices and conditions for transfer of data. The requests are usually from other official bodies, are analyzed individually and information is transferred free of charge

France (ASFA)

In ASFA case (different private companies managing motorway networks), a first condition is to collect updated safety attributes (speed limits for instance) from all the French pri-

vate motorway companies. Only the whole network coverage will interest service providers to build up an offer based on safety attributes. So it is necessary to have one entity gathering, storing and publishing the data. Autoroutes Trafic, which is a company created by the private motorway companies, is currently this entity.

The price of a safety attributes database shall take into account the following factors:

- cost to collect and produce the data
- cost to maintain and exploit the data
- cost to store and make data available
- cost of quality certification if it is necessary
- cost to use the data (IPR)

Slovakia (Slovak law does not deal about intellectual property rights on set of data for public authorities)

Slovak Road Administration handles the usage of central road database by the principle of public interest. This means that the data are free of charge for public and state bodies and organizations, or for purposes which are non commercial. These principles are secured by data licensig (license agreement). Our organization does not handle the commercial use of data yet. There are not any business model defined yet.

Flanders

This is still under discussion. Probably a contract will be established.

UK - Welsh Government The 'value' of preventing collisions (Department for Transport published figures, currently April 2009 - link <http://www.dft.gov.uk/webtag/documents/expert/pdf/unit3.4.1.pdf>) is used to justify and prioritise safety schemes on the motorway and trunk road network in Wales.

UK - Southwark

Much of the geographical data we hold and create is in part derived from Ordnance survey (OS) data, so under our present contract with the OS; anyone not working directly for Southwark would also need a contract with the OS in order to use that data. In short it is likely we hold joint IPR with the OS for the data in question.

At this present time I am not aware of any defined business model of how this data is made available (although I have been in discussion with the highways asset team to publish maps online - however, I'm not sure if they even look after road safety features). Data.gov.uk has released some guidelines/suggestions, but this is something each business unit would be in charge of (with guidance from comms, legal, ISD, etc...)

UK - TfL

Road safety data at TfL consists of traffic collision and speed limit data.

Traffic collision data:- TfL receives data from the Metropolitan Police Service for internal use. There are data protection acts relating to the data due to the sensitive nature of it, personal details of people, type of vehicle involved, location of collision etc...

Speed limit data:- TfL is not compliant to collect or disseminate this dataset. TfL does however make this data available freely and can be downloaded from the internet.

<http://www.tfl.gov.uk/corporate/projectsandschemes/7893.aspx>

Sweden - STA

Direct use (within a company, organization etc): User license for internal use. Different charges for different user categories:

- Normal user pays proportional to the number of users and amount of data (defined by geographic area and number of feature types). The price for one user and all data (total network and all features) is approximately 11 000 € year 1 or single delivery, and approx 4 000 € from year 2 for continuous updates.
- For research and education the price is reduced to delivery charge only (approx 700 € for a single delivery or 1 300 €/year for continuous updates)
- For test/evaluation there is no charge

For data processors (spreading data to other parties) the charge is royalty based or negotiated

Question 2. Do you, as Public Authority, have a defined business model of how the data (road safety attributes) are made available? If so, please describe it shortly.

Norway Ministry

All road- and traffic data that are not regarded as dynamic are stored in the National Road Database. These data are sold through the public organization Norwegian property to anybody. All road- and traffic data that are not regarded as dynamic are stored in the National Road Database. These data can be given away for free to vendors, suppliers and contractors that have a valid contract with the NPRA. Data handed over to a user for free, should only be used for the purpose stated before the handover.

Germany - Mecklenburg-Vorpommern

At this moment such a business model does not exist. If needed, a specific recommendation is going to be developed and implemented.

Germany - Bavaria

No, there is no fixed business model. It is a question of negotiation.

Portugal

We do not have a data model for road safety attributes. It is being defined. The database is SQL and mapping database is ESRI shapefile.

France (ASFA)

At this time, it is too early to talk about a precise business model for road safety attributes. Indeed, ASFA and Autoroutes-Trafic started collecting and storing the whole network permanent speed limits data and the qualified update process is being setting up.

Though, there is an existing model built for real-time traffic data delivery to service providers. It is based on the length of the covered road network with traffic data. This business model deals with two different types of data: traffic service levels and traffic events. The cost of each type of data depends on the number of kilometers covered. A service provider can choose to buy both types of data or just of one of them, for the whole motorway network or just for a part of it. Beside that, the service provider has to pay a license, which defines conditions to broadcast the data (type of media on which the data is broadcast, right or not to resell the data, etc).

Service providers are interested in such road safety attributes data even though they still see technological issues regarding the broadcast of this type of data. For example, RDS-TMC services cannot broadcast speed limits because of limitations in the implemented protocol. In the next few years, services based on DAB+ and DMB protocol should arise. For the exchange of information they will use the TPEG protocol, which already covers the delivery of safety attributes information.

A faster way to provide the safety attributes to the end user would be to directly deal with map providers like Navteq and TeleAtlas, as done in ROSATTE. Indeed, they both provide their map database to a very large number of the navigation and information systems (On board units, PND etc...). Embedding updated safety attributes in their database will ensure a straight availability to the end users.

Slovakia - see the answer at Q1

Flanders - Not yet.

UK - Welsh Government

National statistical bulletins are issued routinely, EuroRAP risk maps are published annually and we are currently considering additional ways of informing road users if high accident concentrations exist (to comply with the European Directive 2008/96/EC).

UK - TfL - No defined business model.

Sweden -STA

See answer Q1 (different charges for different users) and the enclosed documents

Question 3. How do you handle liability issues in your data supply process? What responsibility rests on your data suppliers (local and regional authorities, etc)?

Norway Ministry

Most of the data is collected by the NPRA, thus very few private suppliers. Local and regional suppliers collect a limited number of data sets that are aggregated to a national level. These suppliers are subjected to the same rules as the NPRA. There is no national legal regulation that handles liability issues. The supply chain is based on written agreements between stakeholders (local and national government bodies) that describe timeliness and level of quality - but no penalties for not delivering or underperformance.

Germany - Mecklenburg-Vorpommern

Data can only be provided, if the third party accepts a non-liability clause at the same time. That means that the road administration authority does not assume any liability on incorrect data. The acquisition of data provided by third parties depends upon the land Mecklenburg-Vorpommern or the Federal Republic of Germany are entitled the usage right exclusively. Before the data are transformed into data bases, they are subject to an internal check. Liability claims, which are due to the usage of external data, rest with the road administration authority insofar. Third parties do not have any access to the data base system of the road administration authority. For this reason data losses caused by the misuse of data by third parties and liability risks resulting from such data misuse can be excluded.

Germany - Bavaria

The responsibility for the data supply for high-level roads (Highways, Federal Roads and State Roads) lies on the State, for district roads the districts are responsible, for municipal roads the municipalities.

Portugal

We have been working in a document about liability for the use of data provided by INR

France (ASFA)

An agreement is currently contracted between each motorway operator and Autoroutes Traffic. This agreement defines the conditions for data delivery, the expected service levels, the pricing and the penalties that apply.

Slovakia

Data which the central road database consist of are collected by Slovak Road Administration staff (Road Databank Department), this means that the data collection are secured by central level. Our local suppliers represented by local road administrators provide to central level any information (not data collection) regarding to road parameters changes. However, this local road administrators duty is not performed at satisfactory level. Only data which are not measurable in the field (e.g. road structure attributes) are provided completely from local road administrators.

Flanders

Liability issues should be dealt with in the contract. This contract is not yet available.

UK - Welsh Government

National validation checks (see Stats 20 documentation referring to Stats 21 validation checks, link http://www.stats19.org.uk/html/stats_20_notes.html) are an integral part of the data supply process for national statistical purposes.

UK - TfL

Traffic collision data responsibility rests on the Metropolitan Police Service. Speed limit data represents what is on the ground at the time of collection. Data not used widely enough to have liability issues.

Sweden - STA

Collection of data from suppliers (communities, land survey, forest owners etc) is based on voluntary agreements without economic compensation. The supplier instead receives data in exchange for supplied data (for example a municipality receives data for state roads in exchange for supplied municipal data). The supplier agreements defines what, when and how data is to be supplied and the quality demands are defined in the data product specification.

In all license agreements to customers there is a specific clause that protects us (as being the national supplier) and our collaborative partners (communities, land survey, forest owners etc) to any claims from users caused by errors in data.

Question 4. Have you implemented any certification process to ensure the quality of road safety data in your databases?

Norway Ministry: No

Germany - Mecklenburg-Vorpommern

Currently, the data base system of the road administration authority does not hold any data on the road network as a whole with regard to road safety. Data on road safety are only collected and qualified in case of actual incidents. The road administration authority does only keep data in its data bases, which are needed to plan, design, construct, main-

tain, operate and administer federal and land roads. Generally speaking, certification processes have not been implemented in the road administration authority yet. To ensure the quality of the data bases data are subject to different internal plausibility checks. These checks vary with respect to different types of data.

Germany - Bavaria

No, there have been research activities for measuring data quality (EuroRoadS, FeedMAP), but no processes are implemented up to now, as there is no use case yet.

Portugal

There is no certification process the data. The data are examined individually and checked for consistency and reliability. There are some automatic processes that ensure consistency of information

France (ASFA)

Motorway companies, ASFA and Autoroutes Trafic started setting up a qualification process of the speed limit database. It is not yet a certification process but this can be a further step.

Autoroutes Trafic already built a qualification process for real-time traffic data. Indeed, the quality of the data provided by motorway companies is analyzed and evaluated every six months. At the end of the process, quality indicators are produced. A quality report is delivered to each data supplier. Thus they can see the improvement done regarding the quality of their data in the last six months. The report obviously points at the issues to be fixed during the next semester and so on.

This traffic data quality process can be applied to the safety attributes provided by the motorway companies.

Slovakia - no.

Flanders - Not yet.

UK - Welsh Government

The checks detailed at Q 3 above ensures a certain level of data quality.

UK - Southwark

We have not although it does depend what 'road safety data' you are referring to. Our collision statistics are collected and passed onto us by Transport for London (TfL), I presume they have standard means in order to assess the quality of the data although I am not sure what they are. When importing the collision statistics into our system we do complete checks on the data but these are just visual (looking at some of the new records to check they look OK) and there are no standard methods for this. With regards to other road safety data such as traffic counts (for speed data) and traffic calming attributes on our road there is no certification process to ensure the quality of the data.

UK - TfL

No. But:

Speed limit data is based on what is on the ground at the time. It is also collected based on notices sent to the government gazette. The geometry of the ITN - Integrated Road Network is based on Ordnance Survey data so the quality of that lies with the Ordnance Survey, as with the attributes.

Collision data is validated by TfL for use in a database but the attributes, geometry and the dissemination of the data is not the responsibility of TfL.

Sweden - STA

No formal certification (according to ISO...).

However, all work related to the road database is based on processes in the Transport administrations management system. We also perform, on a regular basis, quality controls of the data input to the system as well as the stored data.

Question 5. Please enclose any documentation or reference available, detailing the IPR issues at national/regional/local level. (*The materials can be provided in any language of EU Member States*).

Norway ministry - price lists for data distribution and info

Germany - Mecklenburg-Vorpommern

The federal legislator has got the exclusive legislative power. It is therefore beyond the competence of the land Mecklenburg-Vorpommern or local authorities to enact any divergent law or other regulation on IPR - issues. Insofar we can only refer to the German Copyright Law (info document received)

Germany - Bavaria - no materials available

Portugal - no materials available

France (ASFA) - no materials available

Slovakia - no materials available

Flanders - no materials available

Luxembourg - informed that Commission "Commission nationale pour la protection des données (CNPd)" gives autorizations and refusals on such issues, cf. www.cnpd.lu.

UK - Welsh Government - no materials available

UK - Southwark - no materials available

UK - TfL - road collision data received

Denmark

<http://www.vejsektoren.dk/wimpdoc.asp?page=document&objno=74639> Road Directorate (accidents data).

<http://www.statistikbanken.dk/statbank5a/default.asp?w=1280> Statistics Denmark

Sweden - STA - sent 1. NVDB Content-Overview (a brief description in English of the concept NVDB (National Road database)); 2. Pricelist for road data products and services from Transport administration (in Swedish) and 3. Road data product catalog (overview in English)

APPENDIX 3: Data collection, exchange and update: Swedish example

This appendix will detail the process views on data collection, exchange and updating from the Swedish National Road databases NVDB (1) and RDT(2).

NVDB = The Swedish national road database

RDT = The Swedish national database for traffic regulations

1. NVDB - process view

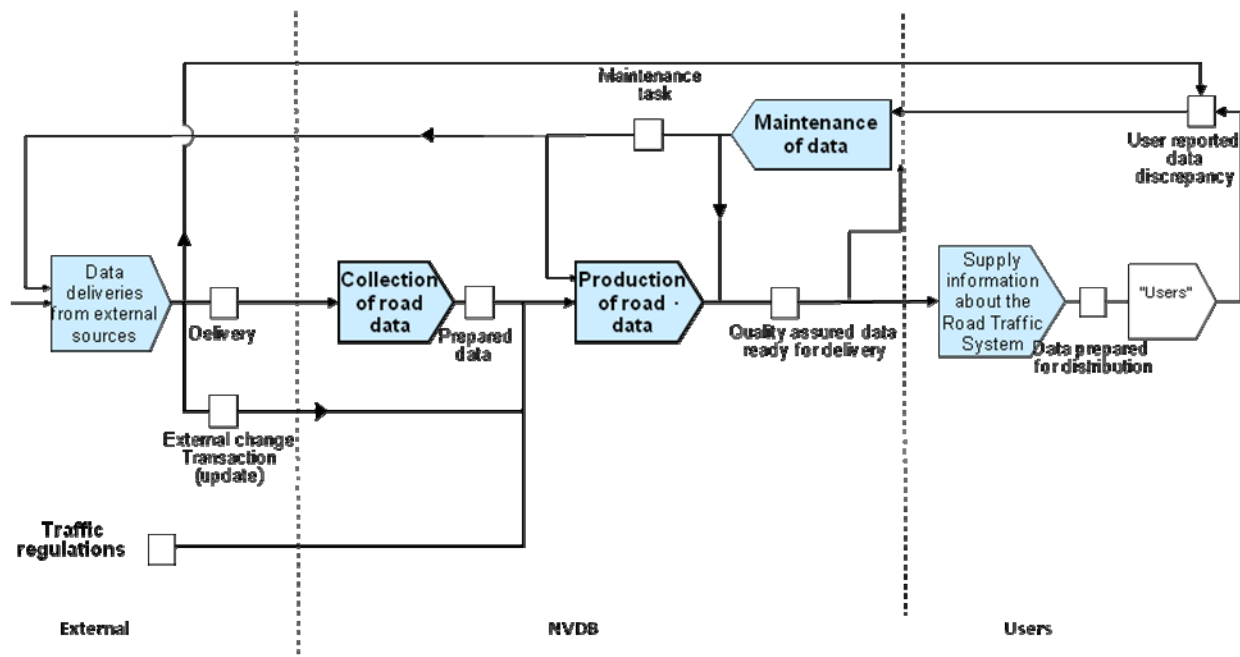


Figure 4 - NVDB - process view

1.1 Data collection

The principle construction of the NVDB consists of two parts. The first part, the road network, describes the position of the roads in relation to the surrounding landscape and how they connect to each other. The second part, the connected features, describes the road's properties and applicable traffic rules.

All input data comes directly from STAd or from the NVDB co-partners.

The Swedish Transport Administration, Swedish municipalities, Swedish Local Authorities, the forestry industry, the Swedish Transport Agency and the Swedish Mapping, Cadastral and Land Registration Authority collect data directly from source. This includes everything from official regulations to other legal documents. The source could for example be local traffic regulations, construction documents, as-built drawings, etc. This can also involve certain field measurements.

Features are divided into:

- **NVDB features** - which all road managers are obliged to collect.

- **STAd features** - which the STAd is obliged to collect. Applies only to the state road network.
- **Other types of features** - features collected from other source systems within the STAd.

The NVDB is designed so that it is able to accept further types of features.

All feature types within NVDB are specified in the "NVDB - data catalogue" which holds all necessary definitions (valid values, data types, collection rules etc.).

1.2 Data delivery and data update

Data from the NVDB co-partners can be delivered for storage in the national road data base using mainly the following three types of file formats:

- *.**nvd** - an in-house format that requires "Slussen" (a NVDB technical platform application) to be able to be used. This format is used for both initial deliveries as well as for incremental updates.
- *.**xml** - Swedish standard SS637004, which requires import functionality based on the standard's xml schema. This format is used for both initial deliveries as well as for incremental updates.
- *.**shp** - shape, a file format that can be used when working in an ESRI environment. This format is only used for initial deliveries.

The supplier prepares the data prior to central assembling for the database. This is done at a common production centre using different methods and routines. A data acceptance test is carried out both at the preparation stage and prior to assemblage.

We check and declare the data in the databases through mechanical and visual inspections. A certain amount of random sample control also occurs in the field. We check that the data is current, that the figures are correct, etc. We also carry out monitoring inspections at our data suppliers to quality assure the collection of data.

1.3 Data sharing

To be able to use any of the NVDB products the customer must have signed a contract with STAd.

Today the data is delivered either as *a pre-packaged standard product* or as *a customised product*. Future development of NVDB will imply that data also will be offered to external users via services (WMS, WFS etc.) accessible via geo-portals.

"Lastkajen" is an Internet based application (www.vv.se/lastkajen) that makes it possible to order and obtain road data from the NVDB and other STAd databases. This is where you can either obtain pre-packaged standard products or customised products to suit your own needs.

The NVDB products are delivered in four different file formats:

- *.**nvd**
- *.**xml**
- *.**shp** - This is an exchange format that most GIS applications can read. The format is simple for those who, for example, need snapshots for producing maps.

*.mdb - personal geodatabase, a database that can be used when working in an ESRI environment, and which makes it possible to work with complex relationships.

How it functions

There are pre-packaged standard products for the kind of data mostly in demand. These are placed in the "Lastkajen's" file stock at regular pre-defined intervals.

You choose a file format, geographical area (county or municipality) and receive NVDB Road network and all attributes. This is where all the municipalities and counties in Sweden and their road networks and attributes are stored, ready for collection, along with ISA speeds and all the speed limits on the entire road network. "Lastkajen's" file stocks are available in four file formats (see previous page) and the stock is updated every month.

If you want a special product, we use a selector function to make a choice based on your request, for example in reference to geographical area, data, coordinate system, history or changes. The options can vary somewhat depending on the different file formats.

At the "Lastkajen" home page a detailed description is given of all the attributes, available for anyone to view. Road Data can also in certain cases deliver processed data in different file formats for you to collect at "Lastkajen".

2. RDT - process view

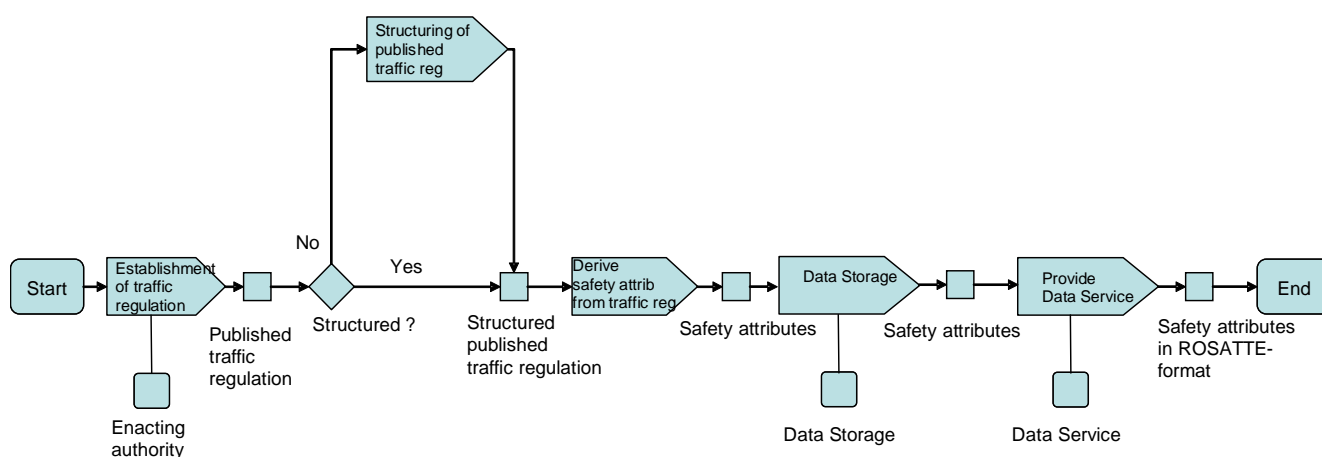


Figure 5 - Traffic regulations (RDT) - process view

2.1 Data collection

The traffic regulations are delivered to the Swedish Transport Agency by authorities on a national, county and local municipality level. A governmental directive forces the authorities to enter the regulations into the database, meaning that regulations not entered into the database are not legally valid. This secures completeness of traffic rule data in the database.

Traffic regulations in the process shown above ends up in traffic rules features connected to the NVDB road network and stored in the RDT-database hosted by The Swedish Transport Agency. In a first step the features are called BTR-features. Such features may overlap each other. There may for instance be one speed limit 50 km/h on a certain street, but on a part at the middle of the street there may be one more speed limit 30 km/h overlap-

ping the first one. The BTR-features are in a second step derived into HTR-features, meaning features that are explicit, not overlapping each other. The intention is to produce HTR-features to make it simple for data users, like navigation systems, speed alert systems (ISA) and similar.

It is planned that HTR-features are daily distributed to the Swedish Transport Administration for their internal use and for further distribution to external users.

1.2 Data delivery and data update

When new or altered traffic regulations are decided they has to be entered into the database, otherwise they are not legally valid. This action is done by the authority which is responsible for the regulation. Some traffic regulations are completed at source (by the responsible authority) with structured data and digital road network connection. Only authorities that have an customized IT application for traffic regulations design can complete the traffic rule data in that way. Other authorities just deliver the regulation document, and in that case the Swedish Transport Agency completes with structured data and digital road network connection.

1.3 Data sharing

For the delivery of the HTR-features - as eg. road safety attributes - to external users the channels of distribution that was built for NVDB are used (see chapter 3.5.2.3) and HTR-features is one of the NVDB products.

APPENDIX 4: Survey on “Expected benefits from the use of road safety attributes” - questionnaire and detailed results

Section 1 of this appendix provides the two versions of the questionnaire used in ROSATTE “Expected benefits” study: one version was used for the road authorities and another one for map providers. Section 2 of this appendix gives a detailed overview of the results of the study.

1. Questionnaire “Expected benefits”

As background information the text content of chapter 4.1 was sent out (as a separate document) together with the invitation for the survey.

Two questionnaires have been designed: one targeting the road authorities (1.1) and another one targeting the map-providers (1.2).

1.1 Questionnaire: Road authorities

Administration

Are you representing a
Road authority
National level
Regional level
Local level
Other level

Map provider

Service provider (e.g. software)

Other (e.g. car manufacturer, end user organisation)

Databases in large/other ongoing projects

Other ongoing projects beside Rosatte may influence one another or they may benefit from each other, therefore it is interesting to know what is going on in your organisation/country.

Do you have stand alone business systems for specific activities e.g. a sign post database?
Yes

Please specify what systems/projects and for what purpose:

At what level are these projects running?
Own organisation
National
International (EU)

No

Geoportal or other data store

To increase data availability and usage a portal or data store can be of use, it will facilitate discovering data and information about whom to contact for more information and deliveries.

Would you be interested in delivering data to a geoportal (Rosatte data store implemented as a portal)?

Yes

No, because...

Don't know / Not yet considered

If you deliver data to a central data store would the availability of data of neighbouring administrative divisions (municipality, county, region, country) be a benefit/incentive for delivering data?

Yes, if free of charge

Yes, even if charged

No, because...

Several advantages can be found by setting up a central data store. In your opinion, what benefits can you see from a joint effort between road authorities, map makers or other parties in setting up a Rosatte data store?

Easier access to data

Improved data quality

Lower accident rates

Economical

Environmental issues (e.g. lower fuel consumption)

Other benefits...

Would a geoportal be of help when searching for data instead of having to turn to several organisations (or other organisations than your own) in a country/countries to harvest the data needed?

Yes

No, because...

Don't know

Availability of road safety attributes

Road authorities, map providers, safety systems suppliers and end-users have a substantial need for road data including road safety attributes. For efficient use the data must be easily available.

The road safety attributes discussed are being of importance for the activities of several actors. In your country, are you aware of demands from third party companies or organisations wanting to use road safety attributes, and which would be interested in a near-permanent update of the data?

Yes

What attributes are in demand?

Which are these actors?

Are you planning to charge anything for the data?

For the direct cost of delivering

By a business model

Not decided yet

No cost

Other

No

Is your organisation willing to share this data (with/without charge)?

Yes

Is your organisation considering imposing any restrictions on the availability of data?

Yes

Why? Please specify the restrictions if possible:...

No

If not, please specify why not:...

No

In your opinion, what would be the most important reason for supplying road safety attributes to other parties/projects?

Easier access to data

Lower accident rates

Better use of data

Improved data quality

Economical

Environmental issues (e.g. fuel consumption)

Legislature ("forced" to supply them, INSPIRE directive)

A "fun project"

Other...

Collection of data

The collection of data is a central and time consuming activity. Therefore it is important that it's done efficiently and is stored in an organized way, hopefully following one of the existing standards so that exchanging data is facilitated.

How important, in your opinion, are the different reasons to collect and update road safety attributes?

Mark a number from 1 to 4 to show how important each statement is, 1 being the lowest and 4 the highest.

	1 (I do not agree at all)	2 (I do not agree)	3 (I agree)	4 (I most certainly agree)	Not considered
Easier access					
Lower accident rates					
Better use					
Improved data quality					
Economical issues					
Environmental issues (e.g. fuel consumption)					
Legislature ("forced" to supply them, INSPIRE directive)					
Comment				

Collection of data is often a time consuming and costly process. In your opinion could prioritizing the collection of attributes help speed up the process?

Yes, prioritizing by attributes

What attributes should be prioritized?

Yes, prioritizing by road classes

What classes should be prioritized?
No

Could other ongoing projects influence the collection of road safety attributes?
Yes
How would it affect the collection of data?
Speed it up
Delay it
Interaction benefits between projects
Other (please describe) ...
No

What update rate are you planning to use? Will you have the same update rate for all road classes or different rates depending on the importance of the class?
The same rate for all classes
Continuous
Periodical
At what interval?
Different rates depending on class, please specify the different road classe and if they are updated continuously or periodically and at what interval:

To succeed with the collection of data (and possible adaptation to standards etc), what do you need to fulfil the task?
Applications and/or tools adapted to a certain standard
We have the necessary tools
Legislature needed
Other

In your opinion who should supply applications and/or tools to register road safety attribute data?
Your own organisation
Map providers
Other software providers
Joint venture with map providers and/or software providers
Other
No viewpoint

Is it possible to estimate the time it will take to collect and register the road safety attributes and if necessary adapt them to specifications in the ROSATTE framework?
Yes
When do you think you'll have an updated database with all road safety attributes up to date?
No

Data quality

To be able to assess and compare data from different sources it is important to know the quality of the data.

Do you have specific demands in data specifications on thematic accuracy (attribute value correctness)?
Yes

No

Do you have specific demand in data specifications on position accuracy?

Yes

No

Do you live up to the quality demands in the data specifications you use?

Yes

No

We don't have any specifications on quality

Have you decided to comply to a certain map database standard?

Yes

Which one?

No

Why? Which exchange method/format do you use to manage geographical data?

Please give us your view on how the data quality can be assured?

Metadata

Metadata is often defined as data about data and is important for users who are searching for data for a specific purpose and needs to evaluate its usage and compare it to other sources of data. Metadata should for example include information about quality, lineage, extent and contact information for the actual resource.

Have you added any metadata to your road safety attribute data?

Yes

Please specify what metadata:...

No

Are you planning to add metadata in the near future?

Yes

No

Benefits/drawbacks

Increased availability, usage and quality are benefits that can be found when using a centralized intelligent storage of data. Unfortunately there are also a few drawbacks but they can be overlooked in the long run as the benefits override the drawbacks.

In your opinion will other ongoing projects benefit from the work in Rosatte?

Yes

How?

Learned experiences/increased competence

Shared costs

Shared tools/applications

Shared organisation for collection and storing of data

Other...

No

Please	specify	why	not.
--------	---------	-----	------

Will third parties be asked to pay to use the data?

Yes

What model for payment is your organisation considering?

Payment according to:

amount of delivered data

the time it would take to deliver (and/or process) the data

business case established in relation to the regularity of the data exchange

Other

No

Please feel free to add a comment about the survey:...

Thank you for your answering this survey!

1.2 Questionnaire: Map Providers, Service Providers and Others

2. *Results overview and conclusions*

In this section, the answers received from the road authorities will be described first. After that, the answers from the Map Providers, Service Providers and Others will be dealt with. Only the main results of the questionnaire will be given in this paragraph. The questionnaire and detailed results can be found in Appendix 2 (the questions 4, 6, 8, 17, 18, 19 respectively 5, 6 and 7 are presented appendix 3 section 3).

The aspects to be highlighted by this section from the **road authorities** point of view:

Administration level

Databases in large/other ongoing projects

Geoportal or other data store

Availability of road safety attributes

Collection of data

Data quality

Metadata

Benefits/drawbacks

The aspects to be highlighted by this section from the **Map Providers, Service Providers and Others** point of view:

Distribution of respondents by category

Geoportal or other data store

Data quality

2.1 Road authorities

Administration level

In the evaluation the answers from the different road authority levels have not been separated as the number of respondent for each level is not significant by themselves.

Conclusion - "Administration":

Answers were received from 27 Road authorities. On a National level 16 answered, on a Regional 9 and from Local levels 3 answers were received.

Answers were received from 20 different countries.

Databases in large/other ongoing projects

Do you have stand alone business systems for specific activities e.g. a sign post database?

Yes (74%)

Please specify what systems/projects and for what purpose:

At what level are these projects running?

Own organisation (64%)

National (24%)

International (EU) (12%)

No (26%)

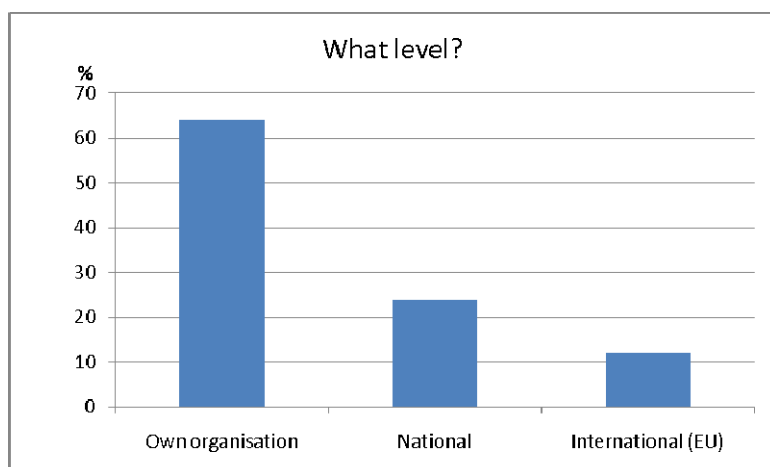


Figure 6 - Stand alone business systems.

Comments on "Systems or projects mentioned and purpose":

National Road Database
 Local Road Database
 GIS applications and databases for road/traffic signs
 Speed limit database
 Accident database
 Bus stop database
 Noise level database
 Management systems (bridge, road network, pavement, maintenance, street lights)
 Traffic flow (ADT)
 Technical installations
 Authorization of heavy transports
 Speed cameras
 Traffic information centre (TIC)
 Road safety data collection
 ISA evaluation project
 ITS application for Motorways (EASYWAY)
 Traveller information- IN-TIME
 Coordination of permits for construction works
 WORM- messaging system public reporting on potholes
 Geodata for planning purposes
 Video camera recordings taken from car travelling in both ways on every road

Conclusion - "Databases in large/other ongoing projects":

A majority (74%) of the organizations have stand alone systems for use within their own organization.

These systems range from object specific (i.e. traffic signs) databases to more advanced Maintenance and Asset Management System.

A minority of the organizations are managing systems on national and/or international level.

Geoportal or other data store

Would you be interested in delivering data to a geoportal (Rosatte data store implemented as a portal)?

Yes (44%)

No, because... (8%)

Don't know / Not yet considered (48%)

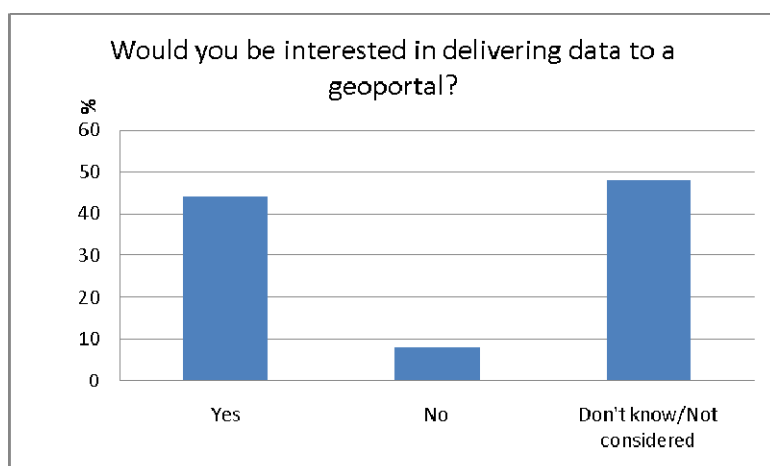


Figure 7 - Interest in delivering data to a geoportal.

Comments on "No, because":
No usecase visible

Several advantages can be found by setting up a central data store. In your opinion, what benefits can you see from a joint effort between road authorities, map makers or other parties in setting up a Rosatte data store?

Easier access to data

Improved data quality

Lower accident rates

Economical

Environmental issues (e.g. lower fuel consumption)

Other benefits...

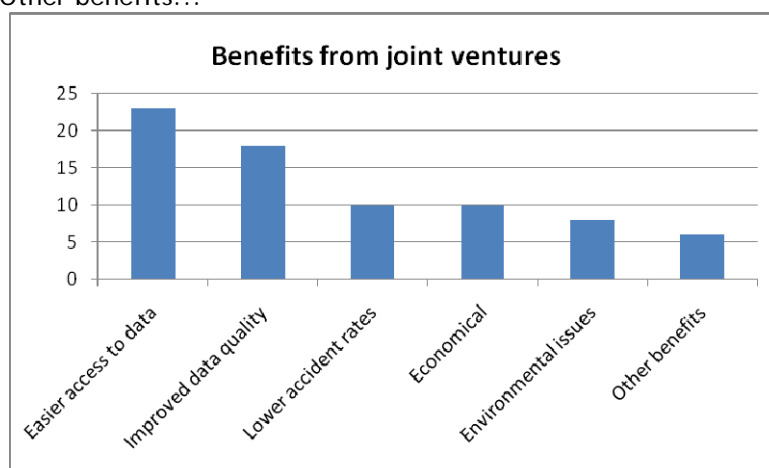


Figure 8 - Benefits found by setting up a geoportal (central data store).

Comments on "Other benefits":

Administrative benefits

Faster update of map information in in-vehicle systems. To compare road data from various countries and best practices

Better observance of speed limits, better road readiness, better acceptance of automatic speed cameras

Better updates of databases. A more central system will enhance the whole database and data production system.

Reduces the need for field inventory in-house. Reduces the need for repeated data supplies to (many) external use.

Conclusion - "Geoportal or other data store":

Interest in delivering data to a geoportal.

There is a relatively strong interest (44%) to supply data to a geoportal, but there are still many organizations that haven't considered the issue (48%).

Availability of data of neighbouring administrative divisions.

There is a strong interest if data is free (68%) but some organizations are willing to pay.

Benefits found in a geoportal.

"Easier access" (31%) and "Improved data quality" (24%) are seen as major benefits.

Geoportal as help when searching for data.

A majority (84%) find a geoportal as good help when searching for data.

Availability of road safety attributes

The road safety attributes discussed are being of importance for the activities of several actors. In your country, are you aware of demands from third party companies or organisations wanting to use road safety attributes, and which would be interested in a near-permanent update of the data?

Yes (65%)

What attributes are in demand?

Which are these actors?

Are you planning to charge anything for the data?

For the direct cost of delivering

By a business model

Not decided yet

No cost

Other

No (35%)

Actors	Attributes demanded
Map authorities	Inventory data related to Road Safety (reference network model, traffic signs, safety barriers, cross section layout, etc.) Bicycle Road Network with its attributes

Map providers	Speed limits Forbidden turns Restrictions (height, vehicle,...) Road width Roadworks Railway level crossing Traffic signs AADT Functional road class Slope Camber Curves Service stations
Service providers	Speedlimits Road width Service stations Parking areas Functional road class Height restrictions Vehicle restrictions Slope Curves Camber Traffic data
Administrations	All road safety attributes
Other regional authorities	Statistic data about roads such as costs, accidents, traffic data, conditions of road infrastructuresand road surfaces
Mapmakers	All restrictions
Traffic police	Speed limit Road width Service stations Parking areas Traffic data
Road planner	Speed limit Road width Service stations Parking areas Traffic data
Private companies, private consulting firms	Statistic data about roads (costs, accidents, traffic data) Conditions of road infrastructures Road surfaces Inventory data related to Road Safety (reference network model, traffic signs, safety barriers, cross section layout, etc.) Traffic flow Accident data Statistic data about roads Features from the National Road DataBank
Research bodies	Statistic data about roads such as costs, accidents, traffic data, conditions of road infrastructuresand road surfaces
Automobile club	All restrictions Accident data
Telematic actors	All restrictions

Others	Traffic flow data Accident data Inventory data related to Road Safety (reference network model, traffic signs, safety barriers, cross section layout, etc.)
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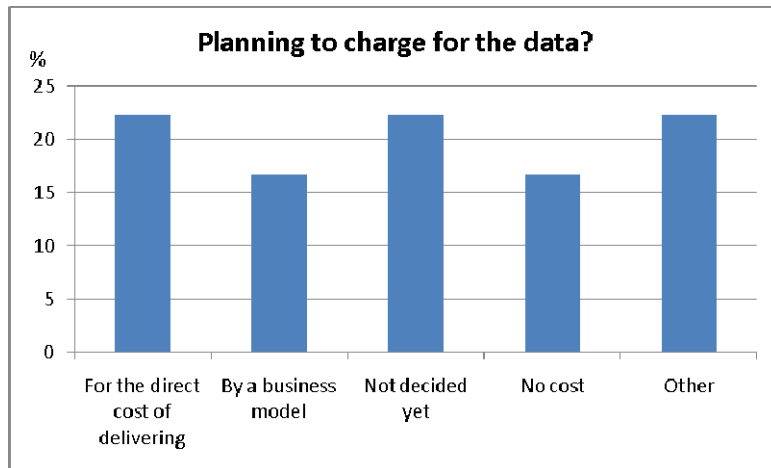


Figure 9 - Charging for the data.

Comments on "Other charging models":

We have a product on the market (Elveg) together with Norwegian Mapping and Cadastre Authority
I don't see the value for charging anything for distributing the data, but it is important for the road authorities that we know what the recipient is planning to do with this data. There is a huge difference between research and commercial purposes. Implementation of ITS Action Plan can change the policy.
Data exchange
According to purpose of data usage, commercial or non commercial

In your opinion, what would be the most important reason for supplying road safety attributes to other parties/projects?

- Easier access to data
- Lower accident rates
- Better use of data
- Improved data quality
- Economical
- Environmental issues (e.g. fuel consumption)
- Legislature ("forced" to supply them, INSPIRE directive)
- A "fun project"
- Other...



Figure 10 - Reasons for supplying road safety attributes.

Conclusion - "Availability of road safety attributes":

Charging for the data.

It is not possible to distinguish a common strategy for how the authorities intend to charge for data.

Willingness to share data.

Most organizations are willing to share data but in some cases there are restrictions included.

Reason for supplying road safety attributes.

The organizations consent to the proposed reasons for providing data. It is notable that the "economical reason" is not a significant reason for data supply.

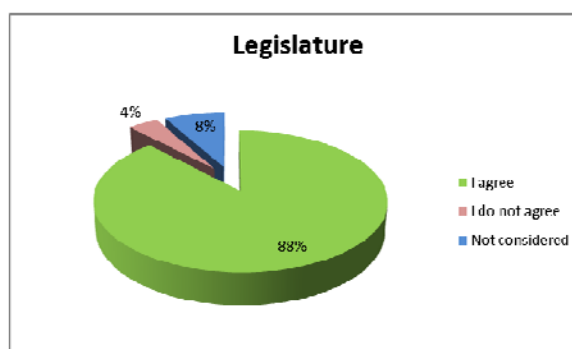
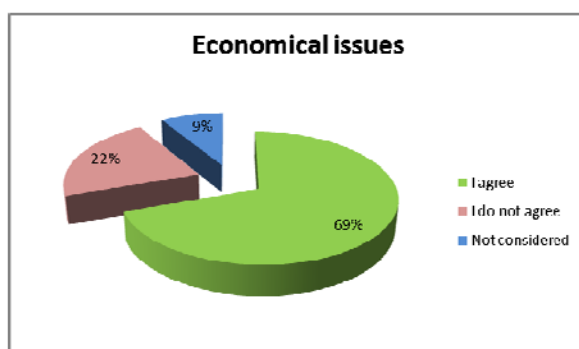
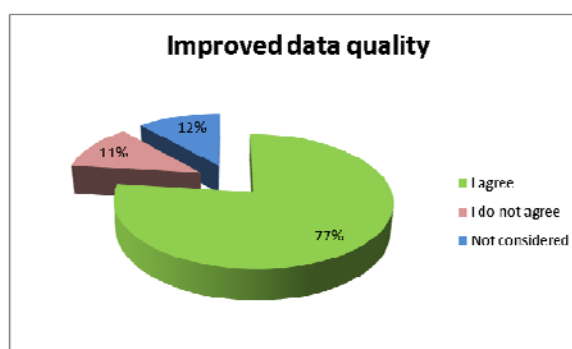
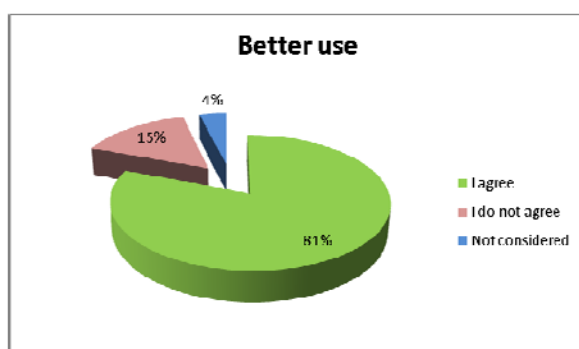
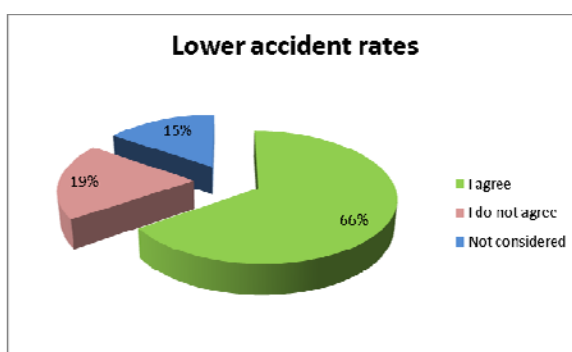
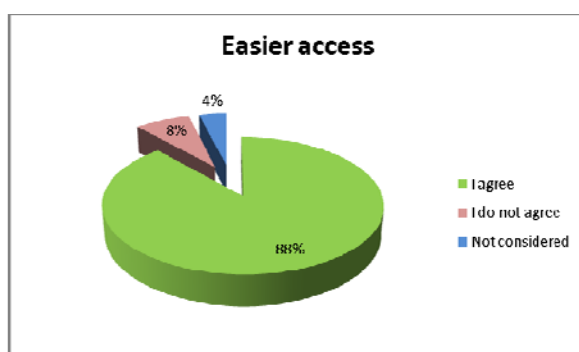
Collection of data

How important, in your opinion, are the different reasons to collect and update road safety attributes?

Mark a number from 1 to 4 to show how important each statement is, 1 being the lowest and 4 the highest.

	1 (I do not agree at all)	2 (I do not agree)	3 (I agree)	4 (I certainly agree)	Not considered
Easier access	1	1	5	18	1
Lower accident rates	1	4	7	10	4
Better use	1	3	7	14	1
Improved data quality	1	2	10	10	3
Economical issues	0	5	14	5	2

Environmental issues (e.g. fuel consumption)	1	5	14	3	3
Legislature ("forced" to supply them, INSPIRE directive)	1	0	15	7	2



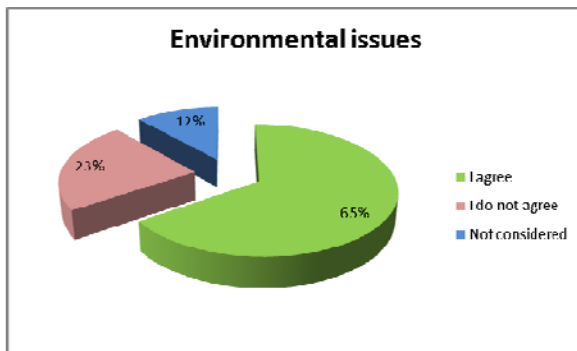


Figure 11 - Importance of collecting data.

Comments on "reasons to collect data":

External demands e.g. national legislature, demands from vehicle industry.

I would say that a reasonable approach could be that if data is being used to earn money by any party then some revenue should be returned to the organization maintaining the data in order to improve quality and maintenance. There are always costs involved in keeping data up to date. And no good means can help if the organization maintaining the data has got too little funding for keeping the data up to par.

Collection of data is often a time consuming and costly process. In your opinion could prioritizing the collection of attributes help speed up the process?

Yes, prioritizing by attributes (42%)

What attributes should be prioritized?

Yes, prioritizing by road classes (29%)

What classes should be prioritized?

No (29%)

"Prioritized attributes":

Speed limits
Warning signs
Overtaking bans
Road topology
Road pavement typology
Traffic data
Accident data
Road safety relevant data and attributes
Road signs (traffic prohibitions or restrictions)
Level crossings
Tunnels
Intersections between roads and bicycle or walking paths
Lane information
Traffic lights
Toll barriers
Motorway junctions
Gradients (slope and banking)

"Prioritized classes":

Main roads
Roads with high ADT-values (> 3500 vehicles per day).
Expressways
Road Network related to transit/international transport
TEN-T network corridors
Motorways
National roads
TERN
Most trafficked network

Could other ongoing projects influence the collection of road safety attributes?

Yes (72%)

How would it affect the collection of data?

Speed it up

Delay it

Interaction benefits between projects

Other (please describe) ...

No (28%)

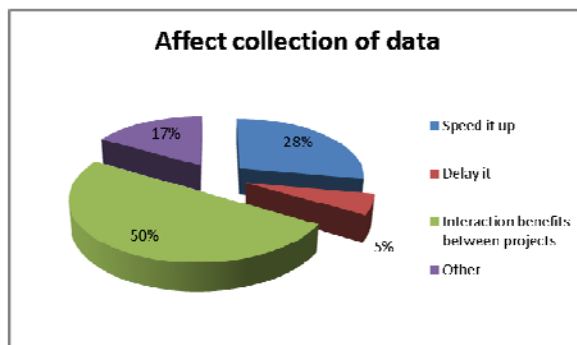


Figure 12 - Influence of other projects on the collection of data.

"Other reasons":

Cost saving by funding from other EU-projects.

Resources (staff)

Supply of traffic rules to a national database has a positive impact.

What update rate are you planning to use? Will you have the same update rate for all road classes or different rates depending on the importance of the class?

The same rate for all classes (56%)

Continuous (64%)

Periodical (36%)

At what interval?

Different rates depending on class (44%)

Please specify the different road classes and if they are updated continuously or periodically and at what interval

Specified "Periodical intervals":

Twice a year

Annually

Specified "continuous updates":

Continuous updates are useful once the updating process works perfect

Description for specified road classes:

Yearly for highways, federal and state roads

Some attributes up to 4 times per year, some annually and some every few years

State roads - continuous Municipal roads - continuous Private roads - periodical (intervals differ)

Forrest roads - periodical (intervals differ)

First priority for the data/attributes concerning the National Roads

To succeed with the collection of data (and possible adaptation to standards etc), what do you need to fulfil the task?

Applications and/or tools adapted to a certain standard

We have the necessary tools

Legislature needed

Other

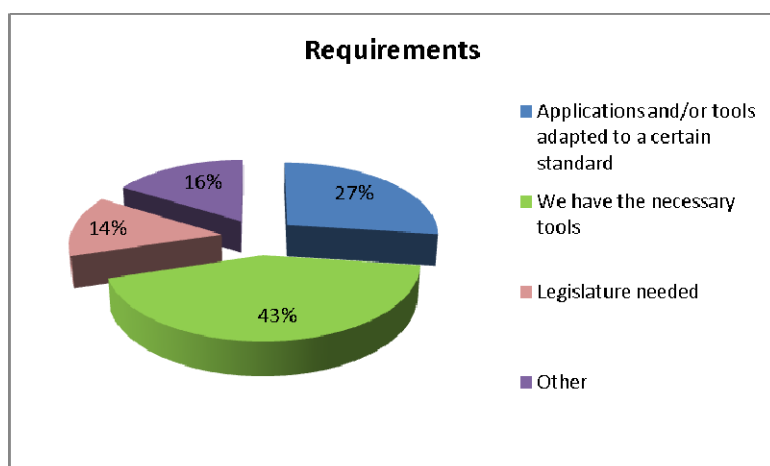


Figure 13 - Requirements to fulfil the collection of data.

"Other requirements" needed:

Acceptance from the management - from EU to national administration level - that collection and maintenance of data is time consuming and requires a lot of resources.

Software development

Access to national road data.

We need an improved internal organisation and resources with the right competence.

Budget must be available for data collection

In your opinion who should supply applications and/or tools to register road safety attribute data?

Your own organisation (35%)

Map providers (5%)

Other software providers (20%)

Joint venture with map providers and/or software providers (30%)

Other (5%)

No viewpoint (5%)

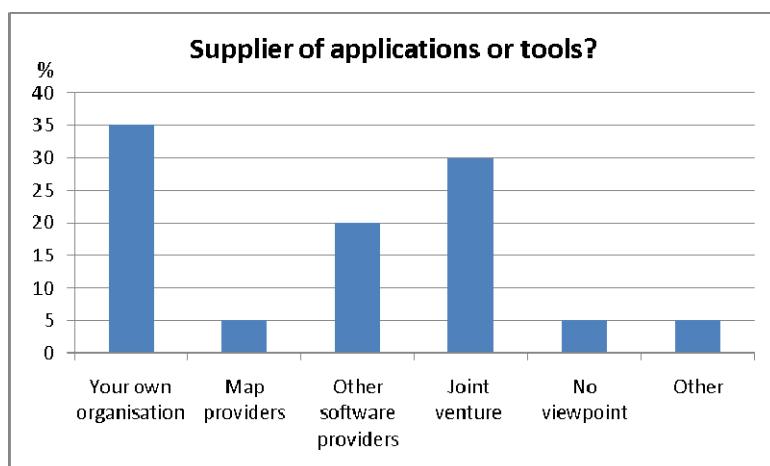


Figure 14 - Suppliers of applications for data collection.

Comments for "Other":
In Flanders the department of mobility and public works provides the tools for every road authority (regional as well as local).
Ministry for Interior NRW

Is it possible to estimate the time it will take to collect and register the road safety attributes and if necessary adapt them to specifications in the ROSATTE framework?

Yes (25%)

When do you think you'll have an updated database with all road safety attributes up to date?

No (75%)

"Updated databases with all road safety attributes":
At the end of 2010
Within the framework of the ROSATTE project
Within 1-3 years, for data based on restrictions
2015
We have them already and publicly available concerning key attributes

Conclusion - "Collection of data":
Importance of collecting data.
Considered as most important.
Easier access
Lower accident rates
Better use
Improved data quality
Considered as less important.
Economical issues
Environmental issues (e.g. fuel consumption)
Legislature ("forced" to supply them, INSPIRE directive)
Help to speed up the collection of attributes.
The organizations estimate that both collection of attributes and prioritization of road class will be speeded up.
Influence of other projects on the collection of data.
Most organizations see possible benefits with interactions between other ongoing projects but "speed it up" is not significant. The possibility of sharing resources is often cited as an advantage.
Data updates.
It is not possible to distinguish a common strategy for updates. The higher classed road network is generally higher in priority in terms of update rates and update frequency
Requirements to fulfil the collection of data.
A lot of organizations have the necessary tools but there are also those that see a need of applications and tools.

Suppliers of applications for data collection.

The own organization, other software providers and in joint venture is seen as a way to solve the supply of tools and application issue.

Estimate possible for updated database.

A majority (75%) of respondents could not give a time estimate for when an updated data set of safety attributes are available.

Data quality

Have you decided to comply with a certain map database standard?

Yes (69%)

Which one?

No (31%)

Why? Which exchange method/format do you use to manage geographical data?

Database standards used:

INTREST Standard

Mapinfo

ESRI ArcGIS

ESRI - SDE

PostGIS/MapServer

Navstreets

Navteq

SQL/SDE

Swiss TOPO

GDF

Inspire/euroroads

ATKIS

Exchange formats used:

Swedish standard (SS 63 70 xx) XML files

ESRI products

Please give us your view on how the data quality can be assured?

Responsibility for quality assurance by local players

We have a feature catalogue with strict definitions that should be followed. Some of the data are mandatory, and only values that are specified are allowed. We do also have a data controller function in every region. They are doing spot tests on different datasets according to a quality plan.

A contractor is obliged to deliver a certain quality. Each road authority or districts can verify this quality by controlling parts of the inventory they received. On the other hand, when the traffic sign database is used as source for a number of studies and research purposes, feedback concerning the data quality is always interesting and useful to make it better.

By means of random checks. Take into account the results of random checks to improve data quality.

We have a feature catalogue with definitions that should be followed. Some of the data are mandatory, and only values that are specified are allowed. Quality controls are performed on the database according to a quality plan.

To define accuracy specifications and control modalities

Give it a confidence rating

By directives and using standards

By a national data platform operator dedicated to monitor and assure the defined quality level

By establishing data collection standards which must be complied with

In GDDKIA we use a programme dedicated for Data Quality Assurance in order to avoid to put wrong data to the geographical databases

Validation runs and field survey verifications

Data quality depends on data transmission modalities (regularity, exactitude...) by different regulatory authorities. A regulation modification could be studied which would lead to impose these authorities to transmit data to the State.

"The ONLY way to make sure that a certain level of quality can be reached is to make sure the organization producing the data has got enough funding for doing so. The reality is that most organizations do NOT have money to raise the data sets to a higher level than required by their own organization and their own needs. Practically ALL attempts whatsoever where organizations or projects have tried to force data suppliers to produce data that the organization doesn't need themselves or otherwise getting played for or funding for have failed.

The only reasonable approach as far as we can see is to start using the data AS IT IS but providing information about the overall quality for that certain dataset. WHEN that dataset then is being used and there is a demand for higher quality those parties wanting that higher quality might consider adding funding to the data provider in order to raise the quality. VERY FEW data providers will just for the good sake put money into providing high quality data to third parties. Most organization has often not even fundings enough to maintain the data they need themselves."

In a close cooperation with other data suppliers, and end users of these data. We have a close co-operation on specific data in the Oslo area. Cooperation is essential.

"Feed back from users (eg taxi drivers who use the ISA system provides valuable feedback).

Delivery checks ("embedded" in the process) when delivering data to national databases (i.e. traffic regulations RDT and data to NVB).

Quality monitoring can help to develop the delivery process.

A portal may be able to offer tools for quality control.

Quality work requires resources - financial and human resources."

Conclusion - "Data quality - data specifications":

A majority indicate existing demands on thematic accuracy in data specifications.

A majority indicate existing demands on position accuracy in data specifications.

A majority say that they live up to the quality demands in their data specifications.

A majority have decided to comply with a certain map database standard.

Metadata

Have you added any metadata to your road safety attribute data?

Yes (42%)

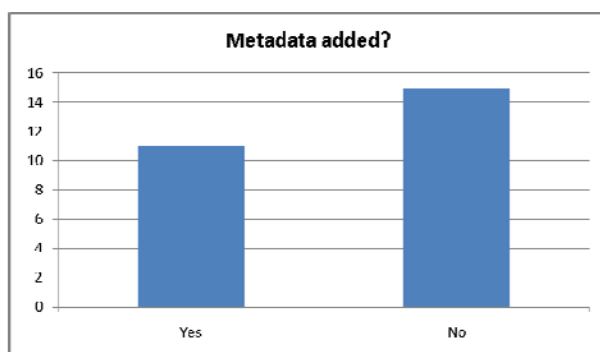
Please specify what metadata:...

No (58%)

Are you planning to add metadata in the near future?

Yes (57%)

No (43%)



Planning to add metadatatype:

Lineage

Update date

Position accuracy

Referencing of location, time, etc

Basic metadata that is mandated by inspire

Cf. based on EN ISO 19115 and ISO/TS 19139 Validity

Geographic correctness

By whom, when, collection method, etc.

Conclusion - "Metadata":

There seems to be a significant lack of metadata but several organizations are planning to add metadata to their data in the future. Perhaps INSPIRE could be the trigger.

Benefits/drawbacks

In your opinion will other ongoing projects benefit from the work in Rosatte?

Yes (84%)

How?

Learned experiences/increased competence

Shared costs

Shared tools/applications

Shared organisation for collection and storing of data

Other...

No (16%)

Please specify why not

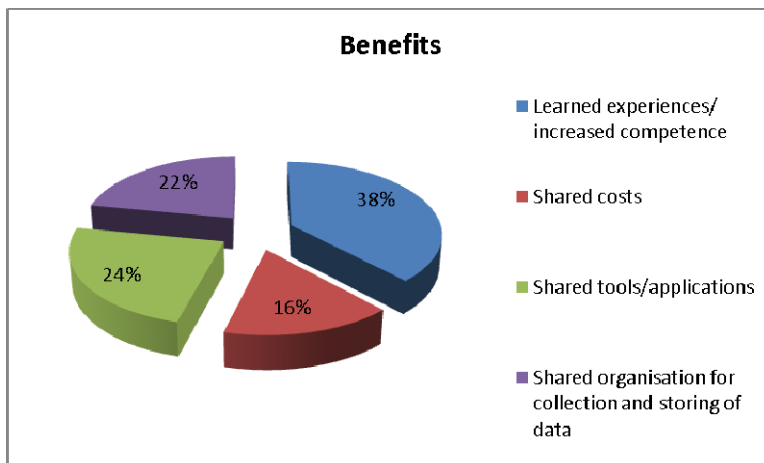


Figure 15 - Benefits

Will third parties be asked to pay to use the data?

Yes (58%)

What model for payment is your organisation considering?

No (42%)

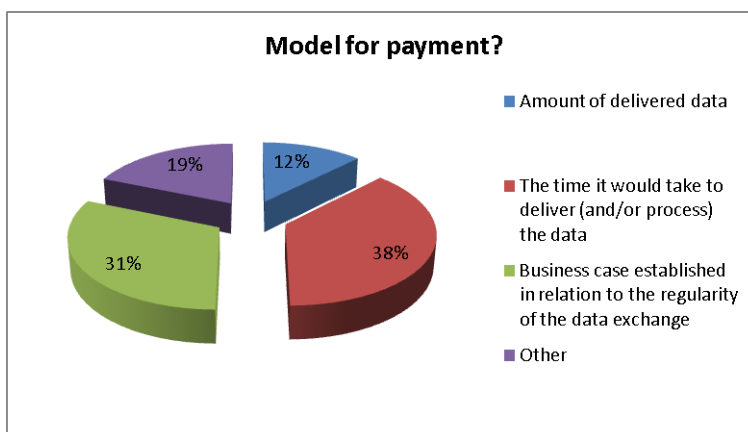


Figure 16 - Payment models.

Description of "other" payment models:

Depending on legislation

Payment probably only for road network, speed limit, height restrictions, turning restrictions, one way street

It depends on usage purposes /commercial, non commercial

Conclusion - "Benefits/drawbacks":

Benefits

Most organizations see possible benefits of the outcome of the ROSATTE project, mainly "Learned experiences/increased competence".

Payment models.

Most organizations plan to charge for making data available but the cost will be low and the motive is usually to obtain cost recovery for their own organization's actual costs.

2.2 *Map Providers, Service Providers and Others*

Distribution of respondents by category

Are you representing a ..

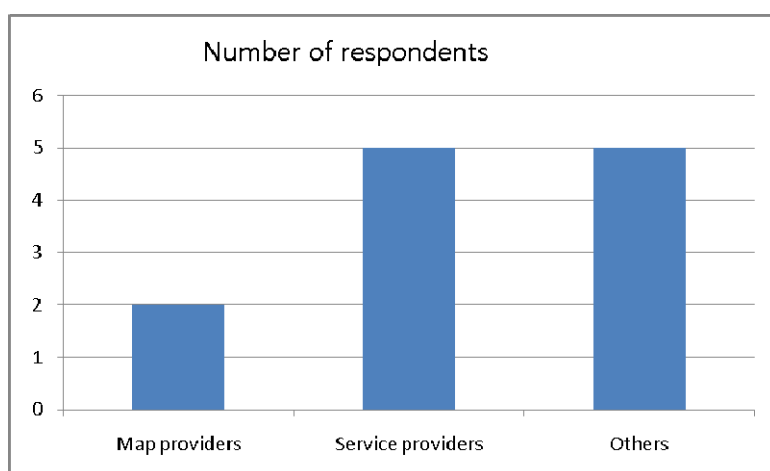


Figure 17 - Number of respondents - Map Providers, Service Providers and Others

There were two answers from TeleAtlas and one from Navteq. As the answers from TeleAtlas only differed in a couple of responses with free text the answers were analyzed as coming from two mapproviders (both comments from TeleAtlas are taken into consideration).

Conclusion - "Administration":

Both major Map Providers have contributed with answers.

Service Providers are third party software developers.

The group "Others" consists of car manufactures and motorists organizations.

Geoportal or other data store

Several advantages can be found by setting up a central data store. In your opinion, what benefits can you see from a joint effort between road authorities, map makers or other parties in setting up a ROSATTE data store?

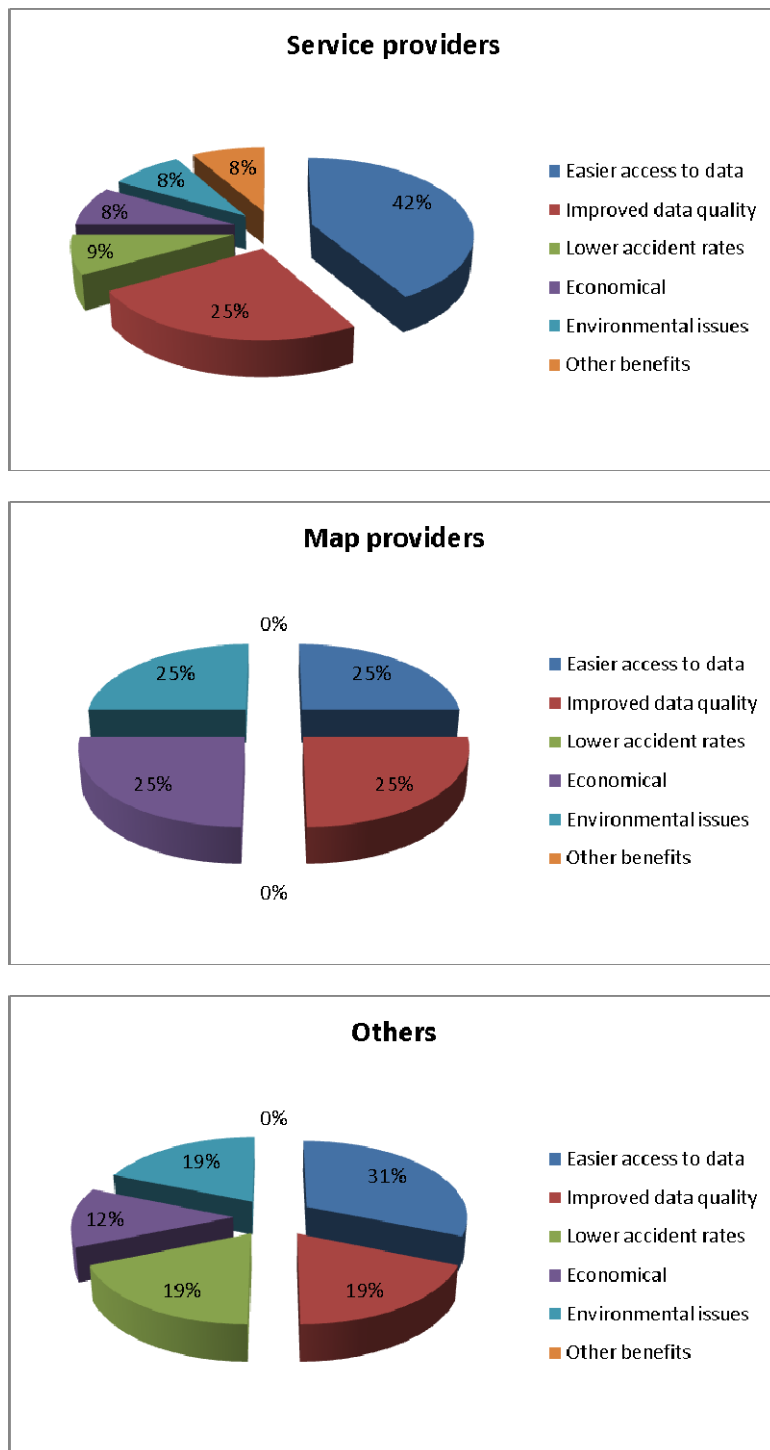


Figure 18 - Benefits found by setting up a geoportal (central data store).

Conclusion - "Benefits found by setting up a geoportal (central data store)":
 "Easier access to data" and "Improved data quality" has been identified as benefits by all three groups.
 There is a difference in how Service Providers and Map Providers judge the "Economical" and "Environmental" benefits.

Map Providers and Others have identified more issues as benefits than Service Providers.

Would a geoportal be of help when searching for data instead of having to turn to several organisations (or other organisations than your own) in a country/countries to harvest the data needed?

Conclusion - "Geoportal as help when searching for data":
All three groups see a Geoportal as a great help when searching for data.

Would you be interested in building a geoportal either by your own effort or in a joint effort with other authorities, map providers or software providers?

Comments on "Interest in building a Geoportal":
No, because we perceive ourselves mostly as users of the data for different services not as providers
We are a road safety association and it is not our task

Conclusion - "Interest in building Geoportal(s)":
One of the Map Providers has an interest of building a Geoportal by their own effort. All other answers support the idea to realize Geoportal(s) in joint venture.

Data quality

Conclusion - "Data quality - data specifications":
All answers - except one from a Service Provider - indicate existing demands on thematic accuracy in data specifications.
All answers - except one from a Service Provider - indicate existing demands on position accuracy in data specifications.
All answers - except two from Service Providers - say that they live up to the quality demands in their data specifications.

Do you feel that there will be differences in data quality depending on if the data is available free of charge or not?

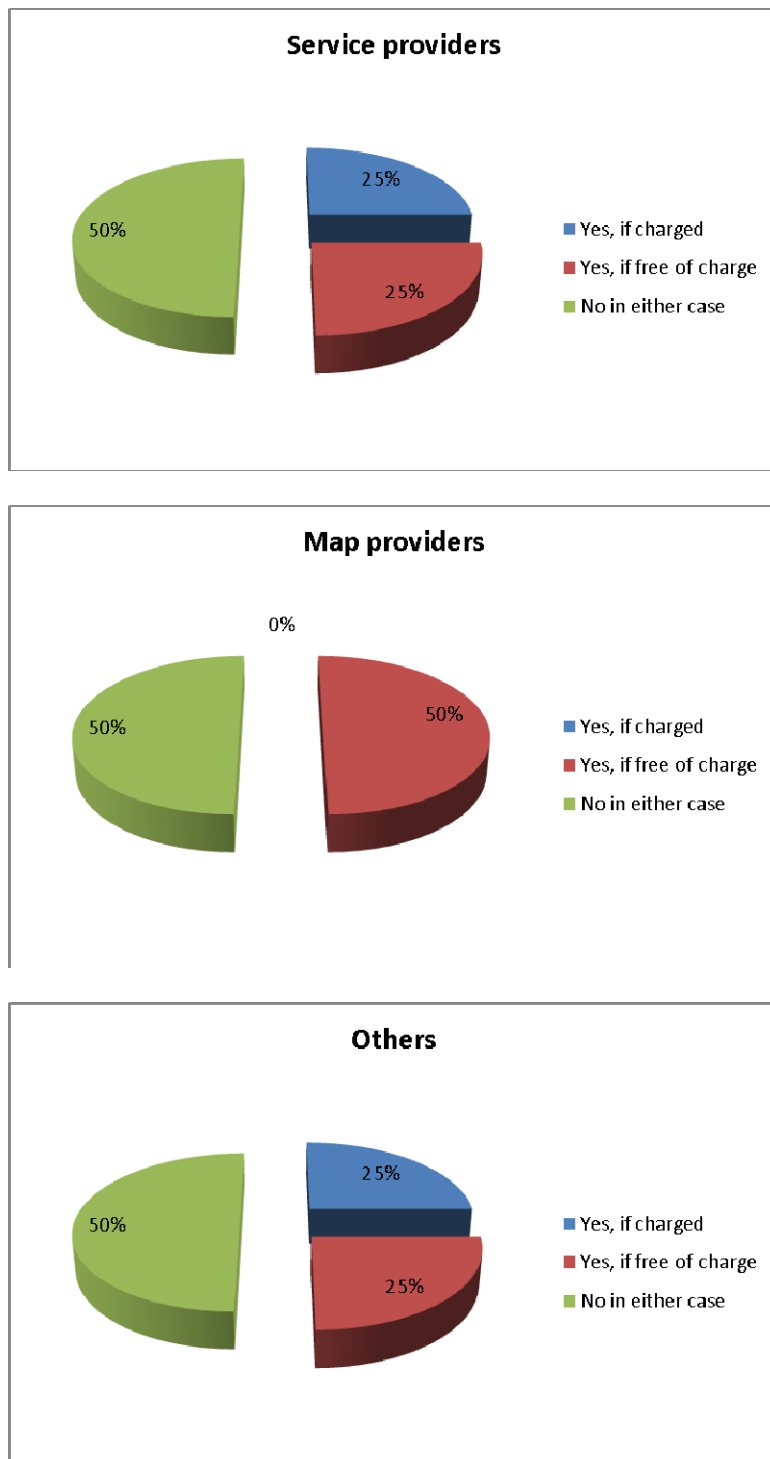


Figure 19 - Dependence between data quality and cost for data.

Conclusion - "Dependence between data quality and cost for data":

The given answers give a scattered view to the correlation between data quality and cost for data.

One of the Map Providers see a risk for a lower data quality if data is available free of

charge.

Have you decided to comply to a certain map database standard?

"Map database standards mentioned":
That provided by the big two map providers and ISO191xx

"Exchange method/format used":
Open street map, GDF
Own map database standard

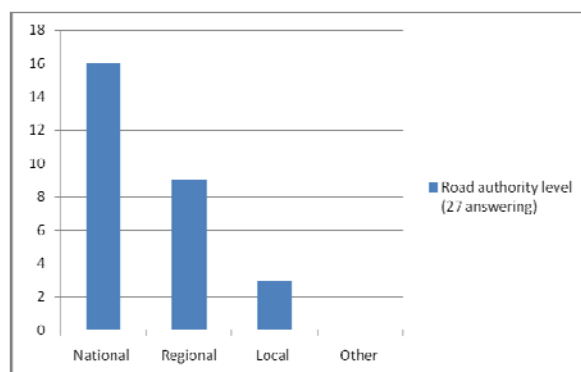
Conclusion - "Use of map database standards":
A majority have decided to comply to a certain map database standard.

3. *Data collected per country/organisation*

3.1 *Road authorities*

Administration level

Are you representing a
Road authority
National level
Regional level
Local level
Other level



Administration

Databases in large/other ongoing projects

Do you have stand alone business systems for specific activities e.g. a sign post database?
Yes (74%)

Please specify what systems/projects and for what purpose:

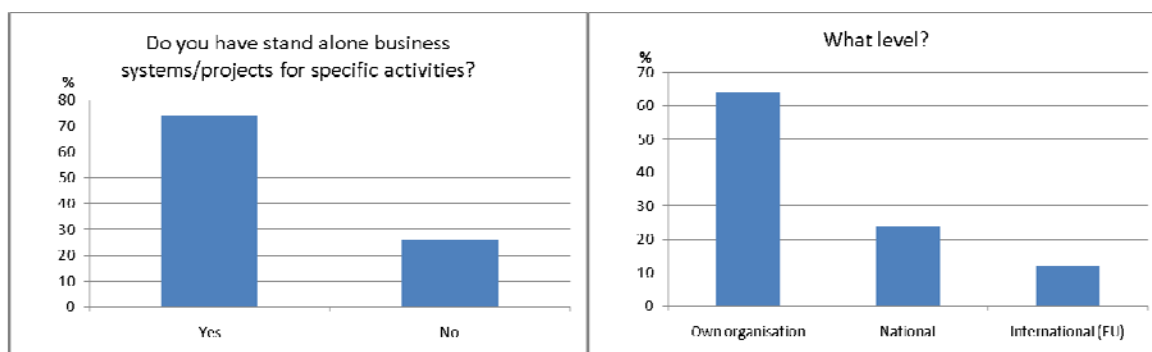
At what level are these projects running?

Own organisation (64%)

National (24%)

International (EU) (12%)

No (26%)



Stand alone business systems.

Comments on "Systems or projects mentioned and purpose":

GIS APPLICATIONS FOR ROAD SIGNING

National Road database, NRDB. Established for road maintenance, but also used for other purposes.

Speed limits

Traffic Sign database of Flanders

Project 'Traffic sign database': to perform an inventory of all traffic signs along the municipal and provincial roads in Flanders. Project ROSATTE

National Road Database (NVDB), Traffic regulations, Accidents, Road management, Bridge management, Pavement management, Traffic flow (ADT), Noise, Technical installations, Authorization of heavy transports, Speed cameras, Traffic information centre (TIC) etc

Road data census (e.g. sign post, guard rails, bridges, tunnels) - traffic, car accidents and road safety data collection and management

Specific client system for maintenance of the network client system for location of street lights

Sign post database, video camera recordings taken from car travelling in both ways on every road, etc

MISTRA: Road Data Base on national level

ITS application for Motorways (EASYWAY) Data platform for Traveller information- IN-TIME Co-operative Driveng (COOPERS) ITS Architecture

System is used as an inventory of all road traffic signs on national roads for the purpose of maintenance

Transport Scotland uses the Scottish Executive Road Information System (SERIS) as its Asset Management System. This system holds information about the entire Trunk Road Network for Scotland for which Scottish Government Ministers have direct responsibility. It is Transport Scotland's road information system containing data on the physical characteristics, condition of the trunk road network and accidents. SERIS is comprised of many modules, including a Pavement Management System (PMS), Routine Maintenance Management System (RMMS), Structures Management System (SMS), and an Accident Management System (AMS). Local Authorities operate PMS and RMMS systems for roads

that are their responsibility. RMMS is an inventory of the roads in the Trunk Road Network and itemises the individual

BALI: experimentation to assess pertinence and feasibility (technical and organisational) of a speed limit database at a county scale.

LAVIA: ISA evaluation project

COSAL: implementation of BALI products in an onboard ISA device.

The city of Stockholm has a Local Road database to which is connected a large variety of business systems for specific activities like Road constructions and road works, traffic regulations, accidents, permissions for special traffic, lights, maintenance and much more.

Different projects

Accident hotspot database

"Sign post database (being develop)

Traffic regulations database (in joint cooperation)

Coordination of permits for construction works; System in operation

Signaling systems database. System in operation

Bus stop database. Database in operation (NVDB)

Traffic statistics and calculations. System in operation (NVDB)

WORM- messaging system public reporting on potholes

Noise level database; serving as basis noise abatements

Geodata for planning purposes. Systems in operation

We have an organization for data provision (PROSAM) working in cooperation for promoting traffic data, and doing specific. Several entities are members from all public levels, and public transport providers as well.AM38:AM39"

"Gävle has its own specific system that supports specific activities - such as traffic counting systems, road maintenance, etc.

Management objects are aggregated from the specific business systems to the GIS-system that holds the "Municipality database"."

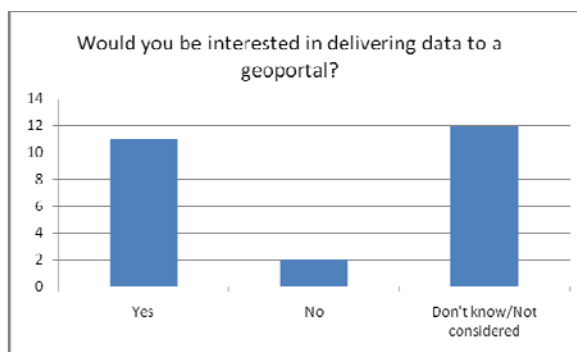
Geoportal or other data store

Would you be interested in delivering data to a geoportal (Rosatte data store implemented as a portal)?

Yes (44%)

No, because... (8%)

Don't know / Not yet considered (48%)



Interest in delivering data to a geoportal.

Comments on "No, because":

Accuracy (and/or data generalization) is depending on the purpose for collecting data in the first place, not on purpose of disseminating it.

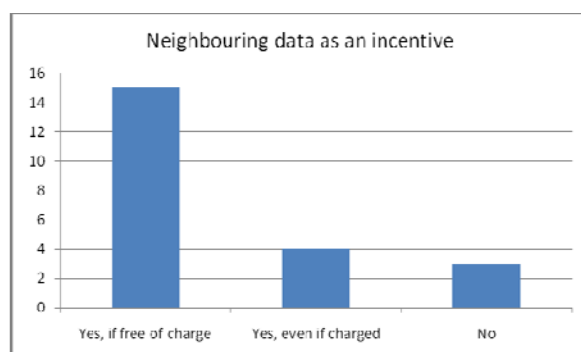
No usecase visible

If you deliver data to a central data store would the availability of data of neighbouring administrative divisions (municipality, county, region, country) be a benefit/incentive for delivering data?

Yes, if free of charge (68%)

Yes, even if charged (18%)

No, because... (14%)



Availability data of neighbouring administrative divisions.

Comments on "No, because":

Accuracy (and/or data generalization) is depending on the purpose for collecting data in the first place, not on purpose of disseminating it.

Responsibility only for parts of the network

Several advantages can be found by setting up a central data store. In your opinion, what benefits can you see from a joint effort between road authorities, map makers or other parties in setting up a Rosatte data store?

Easier access to data

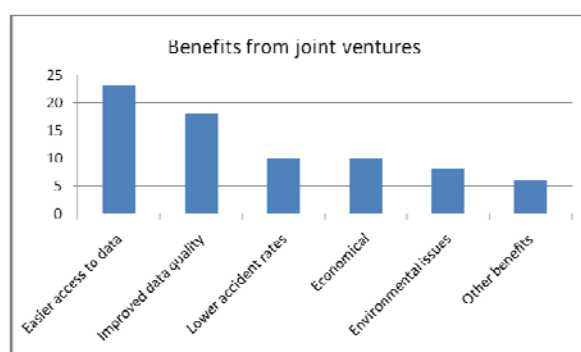
Improved data quality

Lower accident rates

Economical

Environmental issues (e.g. lower fuel consumption)

Other benefits...



Benefits found by setting up a geoportal (central data store).

Comments on "Other benefits":

Administrative benefits

Faster update of map information in in-vehicle systems. Better possibilities to guide traffic to the most suitable roads.

To compare road data from various countries and best practices

Better observance of speed limits, better road readiness, better acceptance of automatic speed cameras

The trunk road operating companies engaged by Transport Scotland have contractual obligations to maintain the RMMS inventory up to date. Further benefits that will assist in the achievement of Scottish Government policies (eg to achieve road safety targets, to reduce the amount of unnecessary car use) and improve the efficiency of Transport Scotland and the Scottish Government's road transport management and maintenance are considered more likely accrue from inter-governmental and authority co-operation than by a central data store per se.

Better updates and improved economy of scale for providing databases. We see sometimes shifting priorities for datashystems within entities. A more central system will enhance the whole database and dataproduction system.

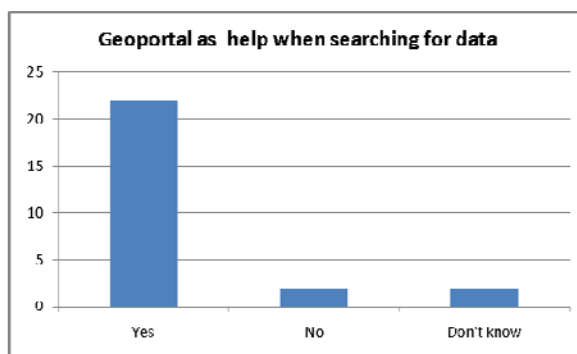
Reduces the need for field inventory in-house. Reduces the need for repeated data supplies to (many) external use

Would a geoportal be of help when searching for data instead of having to turn to several organisations (or other organisations than your own) in a country/countries to harvest the data needed?

Yes (84%)

No, because... (8%)

Don't know (8%)



Geoportal as help when searching for data.

Comments on "No, because":

Accuracy (and/or data generalization) is depending on the purpose for collecting data in the first place, not on purpose of disseminating it.

The trunk road operating companies engaged by Transport Scotland have contractual obligations to maintain the RMMS inventory up to date. Further benefits that will assist in the achievement of Scottish Government policies (eg to achieve road safety targets, to reduce the amount of unnecessary car use) and improve the efficiency of Transport Scotland and the Scottish Government's road transport management and maintenance are considered more likely accrue from inter-governmental and authority co-operation than by a central data store per se.

Somewhat but would of cause depend on coverage and how tight and accurate the maintenance of the data will be

Availability of road safety attributes

The road safety attributes discussed are being of importance for the activities of several actors. In your country, are you aware of demands from third party companies or organisations wanting to use road safety attributes, and which would be interested in a near-permanent update of the data?

Yes (65%)

What attributes are in demand?

Which are these actors?

Are you planning to charge anything for the data?

For the direct cost of delivering

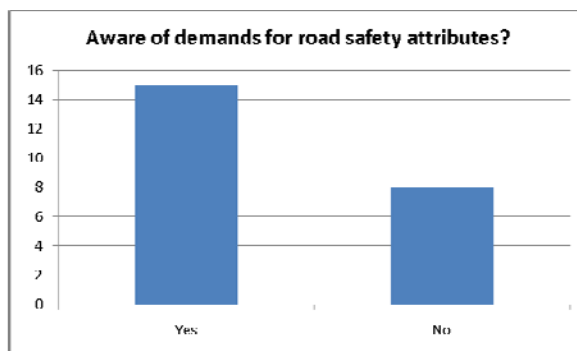
By a business model

Not decided yet

No cost

Other

No (35%)



Aware of demands for road safety attributes.

Attributes demanded:

Speed limit, different traffic signs, AADT

Mostly speed limits, forbidden turns, all kind of restrictions.

All attributes

Speed limit, Functional road class, Height restrictions, Vehicle restriction, Slope (also curves, camber etc).

Speed limits, road width, service stations, parking area and traffic data

Inventory data related to Road Safety (reference network model, traffic signs, safety barriers, cross section layout, etc.)

Statistic data about roads such as costs, accidents, traffic data, conditions of road infrastructures and road surfaces

Speed limits etc.

Roadworks Railway level crossing, Road restriction

All restrictions

Accident data

Features from the National Road DataBank

Bicycle Road Network with its attributes is requested

Actors:

Other organizations, private companies and others

Map providers

Department of mobility and public works, studies and research projects concerning traffic safety and mobility, mapmakers, ...

Map providers, administrations, ...

Map providers, Service providers.

Map providers, traffic police and road planner

Our own sections at SRA / responsibility of black spots improvement activities, road designers/private companies

Other regional authorities, research bodies, private consulting firms, etc

Service providers

Mapmakers (Navteq, Tele Atlas...)

Telematics actors, Mapmakers, Automobile Club

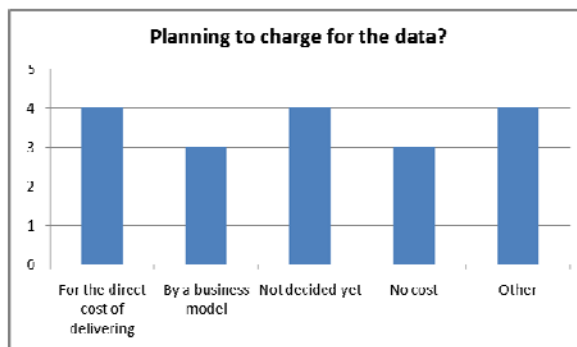
Automobile Club

ICT development companies

Delivers data to NVDB and RDT regularly

Actors	Attributes demanded
Map authorities	Inventory data related to Road Safety (reference network model, traffic signs, safety barriers, cross section layout, etc.) Bicycle Road Network with its attributes
Map providers	Speed limits Forbidden turns Restrictions (height, vehicle,...) Road width Roadworks Railway level crossing Traffic signs AADT Functional road class Slope Camber Curves Service stations
Service providers	Speedlimits Road width Service stations Parking areas Functional road class Height restrictions Vehicle restrictions Slope Curves Camber Traffic data
Administrations	All road safety attributes
Other regional authorities	Statistic data about roads such as costs, accidents, traffic data, conditions of road infrastructures and road surfaces
Mapmakers	All restrictions
Traffic police	Speed limit Road width Service stations Parking areas Traffic data
Road planner	Speed limit Road width Service stations Parking areas Traffic data

Private companies, private consulting firms	Statistic data about roads (costs, accidents, traffic data) Conditions of road infrastructures Road surfaces Inventory data related to Road Safety (reference network model, traffic signs, safety barriers, cross section layout, etc.) Traffic flow data Accident data Statistic data about roads Features from the National Road DataBank
Research bodies	Statistic data about roads such as costs, accidents, traffic data, conditions of road infrastructures and road surfaces
Automobile club	All restrictions Accident data
Telematic actors	All restrictions
Others	Traffic flow data Accident data Inventory data related to Road Safety (reference network model, traffic signs, safety barriers, cross section layout, etc.)



Charging for the data.

Comments on "Other charging models":

We have a product on the market (Elveg) together with Norwegian Mapping and Cadastre Authority. I don't see the value for charging anything for distributing the data, but it is important for the road authorities that we know what the recipient is planning to do with this data. There is a huge difference between research and commercial purposes.

Implementation of ITS Action Plan can change the policy.

data exchange

Accuracy (and/or data generalization) is depending on the purpose for collecting data in the first place, not on purpose of disseminating it.

According to purpose of data usage / commercial - non commercial

Is your organisation willing to share this data (with/without charge)?

Yes (83%)

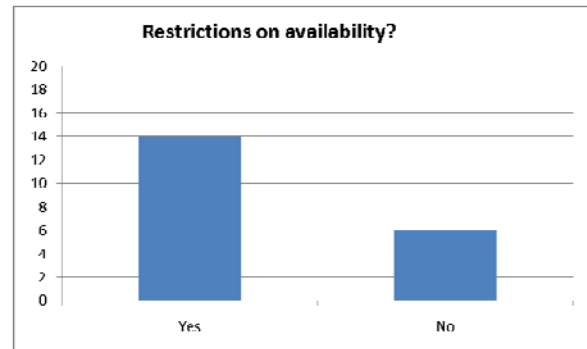
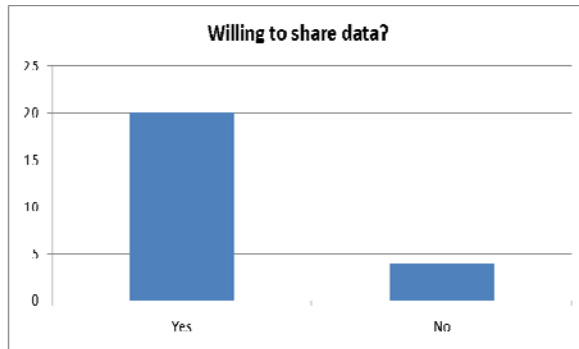
Is your organisation considering imposing any restrictions on the availability of data?

Yes (70%)

Why? Please specify the restrictions if possible:...

No (30%)

If not, please specify why not: ...
No (17%)



Willingness to share data.

Comments on "Description of restrictions":

Only for public use activity.

Data to be used for specific purposes etc It depends on the data given

Restrictions will depend upon the type of data, and the purpose of the demand for data.

Not decided yet: maybe some contra services should be delivered or some requirements will be made in exchange for the data from the traffic sign database

Non-profit use - not to transfer to third parties

Need to validate data and confirm accuracy due to legal implications

Depends on the type of data - not yet considered

The likelihood that restrictions would be considered would depend on the specifics of any requests for data so that it is not possible to specify any proposals here

According to data quality

Data can easily be misinterpreted, if expert knowledge is missing

For technical data there are no restrictions but data that also includes demographic information (Personal Data) are restricted

Comments on "Reasons for not imposing any restrictions":

Elveg is available to everyone, not decided what to do with i.e. traffic signs and AADT

All information classified as public is available for use.

Open availability of data has economic benefits to us

As long as data privacy is not violated, there should be no restriction

We promote unrestricted delivery of public authorities' data free of charge

Not decided yet

In your opinion, what would be the most important reason for supplying road safety attributes to other parties/projects?

Easier access to data

Lower accident rates

Better use of data

Improved data quality

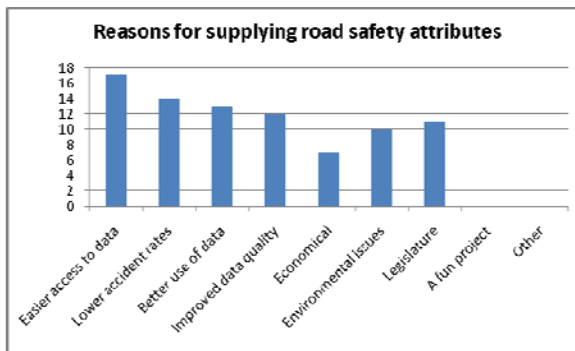
Economical

Environmental issues (e.g. fuel consumption)

Legislature ("forced" to supply them, INSPIRE directive)

A "fun project"

Other...



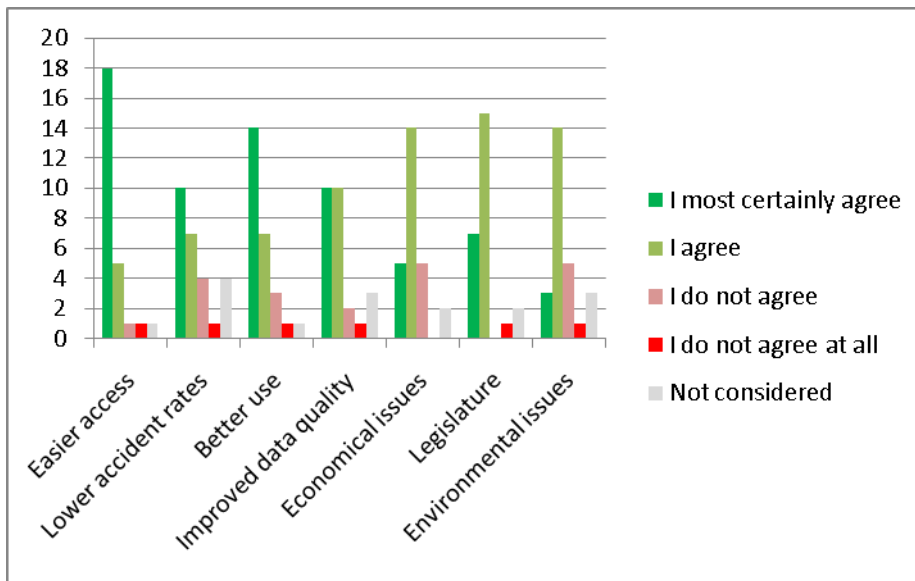
Reason for supplying road safety attributes.

Collection of data

How important, in your opinion, are the different reasons to collect and update road safety attributes?

Mark a number from 1 to 4 to show how important each statement is, 1 being the lowest and 4 the highest.

	1 (I do not agree at all)	2 (I do not agree)	3 (I agree)	4 (I most certainly agree)	Not considered
Easier access	1	1	5	18	1
Lower accident rates	1	4	7	10	4
Better use	1	3	7	14	1
Improved data quality	1	2	10	10	3
Economical issues	0	5	14	5	2
Environmental issues (e.g. fuel consumption)	1	5	14	3	3
Legislature ("forced" to supply them, INSPIRE directive)	1	0	15	7	2



Importance of collecting data.

Comments on "reasons to collect data":

External demands e.g. national legislature, demands from vehicle industry.

INSPIRE directive does not "force" us to publish our data rather it requires us to published metadata about data we are legally obliged to maintain

I would say that a reasonable approach could be that if data is being used to earn money by any party then some revenue should be returned to the organization maintaining the data in order to improve quality and maintenance. There are always costs involved in keeping data up to date. And no good means can help if the organization maintaining the data has got too little funding for keeping the data up to pair.

Collection of data is often a time consuming and costly process. In your opinion could prioritizing the collection of attributes help speed up the process?

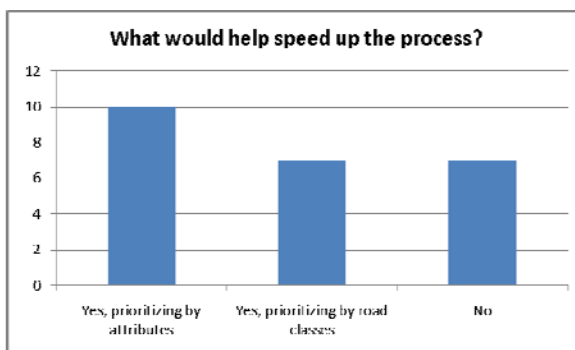
Yes, prioritizing by attributes (42%)

What attributes should be prioritized?

Yes, prioritizing by road classes (29%)

What classes should be prioritized?

No (29%)



Speed up the collection of attributes.

Comments on "Prioritized attributes":

Speed limits, warning signs, overtaking bans

Road topology, road pavement typology, traffic data and car accidents

Road safety relevant data and attributes

For the Trunk Road network in Scotland, highest priority would be given to collecting those data that are of most significance in the achieving its road management and safety objectives.

Those with wide use and significant impact concerning our organization's objectives

Speed limits, other road signs, traffic prohibitions or restrictions for speed limitation, level crossing, tunnel

Should be pointed out by those in the need of the data of the project. But beside the data mentioned in the instructions for the survey Intersections between car roads and bicycle roads or walking paths should be considered high priority.

"The attributes that are also useful in the municipality's own operations are of priority.

The enumeration in the ROSATTE information document - speed limit; traffic signs; lane information; traffic lights; crossings; toll barriers; motorway junctions; tunnel access; gradient (slope); transverse gradient (banking) - is broadly consistent with the municipality's view. "

Comments on "Prioritized classes":

Main roads

Roads with high ADT-values (> 3500 vehicles per day).

All classes should be prioritized in order of importance

Motorways, Expressways, 1st class Roads - Road Network related to transit/international transport, E, TEN-T network corridors

Motorways, urban and sub-urban rural

Motorway, Dual, Single

national roads

TERN, national roads, most trafficked network

Road classes

Could other ongoing projects influence the collection of road safety attributes?

Yes (72%)

How would it affect the collection of data?

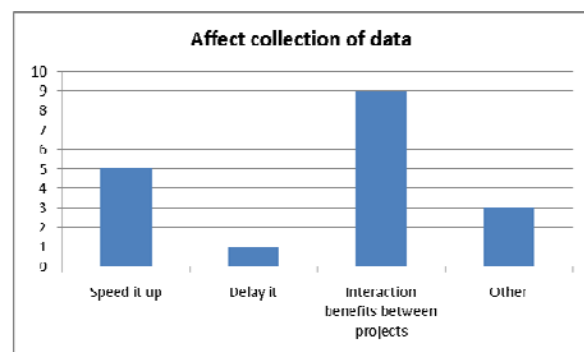
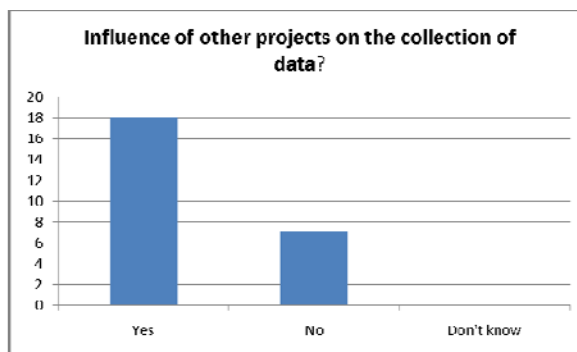
Speed it up

Delay it

Interaction benefits between projects

Other (please describe) ...

No (28%)



Influence of other projects on the collection of data.

Comments to "Other reasons":

Cost saving by funding from other EU-projects.

Too little staff

Other ongoing projects could influence the collection of road safety attributes in each of the ways above; which way would depend on the individual circumstances of each.

Supply of traffic rules to the national database RDT has a positive impact. Replacement of the municipality's local geodetic reference system to the national geodetic reference system (SWEREF99 - in the correct projection zone) may also offer synergies.

What update rate are you planning to use? Will you have the same update rate for all road classes or different rates depending on the importance of the class?

The same rate for all classes (56%)

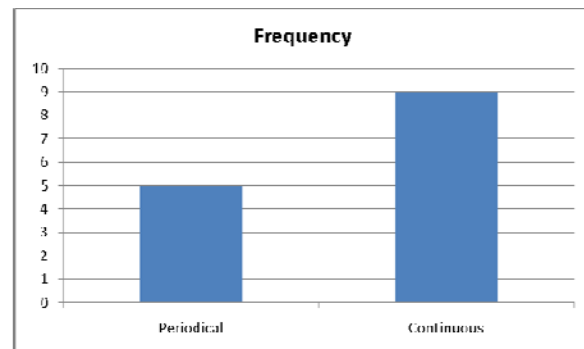
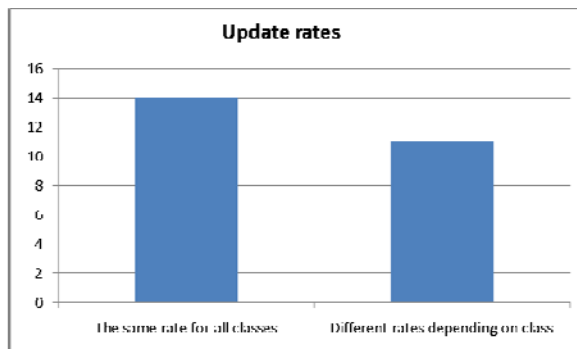
Continuous (64%)

Periodical (36%)

At what interval?

Different rates depending on class (44%)

Please specify the different road classes and if they are updated continuously or periodically and at what interval



Data updates.

Comments on "Periodical intervals":

Twice a year

Annually

Update interval will depend on the road authority (e.g. will be different for the different municipalities)

Periodic updates

Periodic intervals for some and dynamic for other. There are some attributes that one needs to keep updated.

A comment on "continuous update":

Continuous updates are useful once the updating process works perfect, but in the starting phase it would be preferable to begin with periodical updates (which can be triggered by each authority itself when the data is updated)

Description for specified road classes:

Yearly for highways, federal and state roads not defined for roads outside of our responsibility

Usually motorways have more data (and more accurate)

State roads - continuous Municipal roads – continuous Private roads – periodical (intervals differ) Forrest roads - periodical (intervals differ)

Motorway, A Class, B class, C class, Unclassified. Update rate as yet unknown.

First priority for the data/attributes concerning the National Roads

Motorways urban roads and arteries suburban rural

We are still at early stages of establishing update process for road attribute classes

Some attributes up to 4 times per year, some annually and some every few years

This would in general be for upper class roads

There is a high dependence linked to the attribute in question - more dependent than the road class.

To succeed with the collection of data (and possible adaptation to standards etc), what do you need to fulfil the task?

Applications and/or tools adapted to a certain standard

We have the necessary tools

Legislature needed

Other



Requirements to fulfil the collection of data.

Comments on "Other requirements":

Acceptance from the management - from EU to national administration level - that collection and maintenance of data is time consuming and requires a lot of resources. Information should be considered a vital resource for all business systems.

Software development

Budget must be available for data collection

Access to NVDB. We need an improved internal organisation, and resources with the right competence.

There often lacks human and financial resources to perform the task.

In your opinion who should supply applications and/or tools to register road safety attribute data?

Your own organisation (35%)

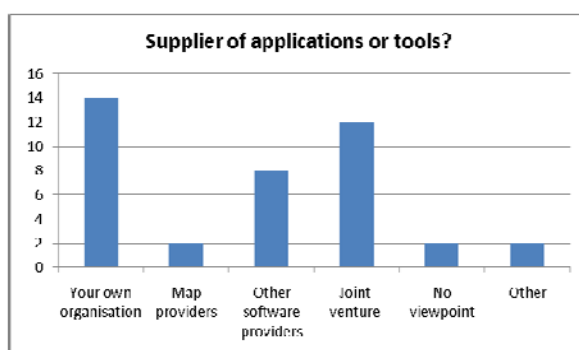
Map providers (5%)

Other software providers (20%)

Joint venture with map providers and/or software providers (30%)

Other (5%)

No viewpoint (5%)



Suppliers of applications for data collection.

Comments for "Other":

In Flanders the department of mobility and public works provides the tools for every road authority (regional as well as local).

Ministry for Interior NRW

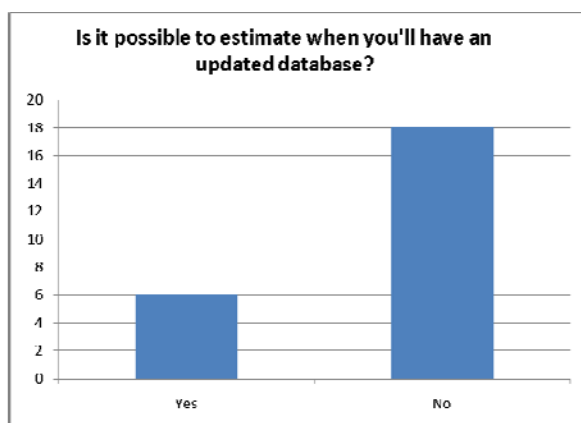
It is necessary to use common standards that several road owners should agree upon

Is it possible to estimate the time it will take to collect and register the road safety attributes and if necessary adapt them to specifications in the ROSATTE framework?

Yes (25%)

When do you think you'll have an updated database with all road safety attributes up to date?

No (75%)



Estimate possible for updated database.

Comments on "Updated databases with all road safety attributes":

At the end of 2010 the initial supply for traffic sign database of Flanders will be completed. From that moment each road authority is responsible for its own updating.

Within the framework of the ROSATTE project.

Within 1-3 years, for data based on restrictions. For other data, like warning signs, there is no time plan decided.

2015

Is depending on priorities, road types, available manpower, etc

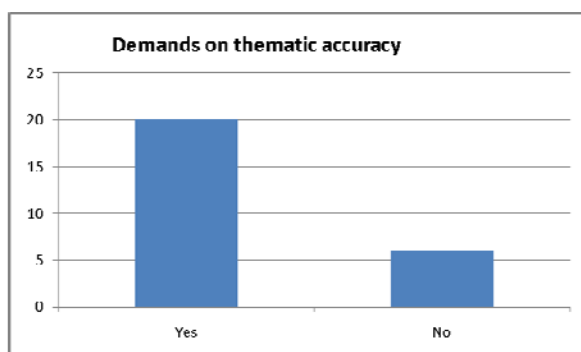
We have them already and publicly available concerning key attributes

Data quality

Do you have specific demands in data specifications on thematic accuracy (attribute value correctness)?

Yes (77%)

No (23%)

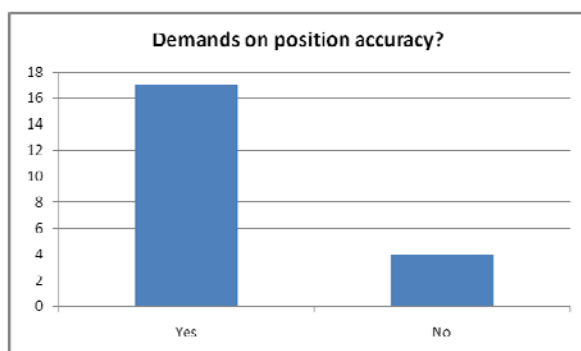


Specific demands in thematic accuracy in data specifications.

Do you have specific demand in data specifications on position accuracy?

Yes (81%)

No (19%)



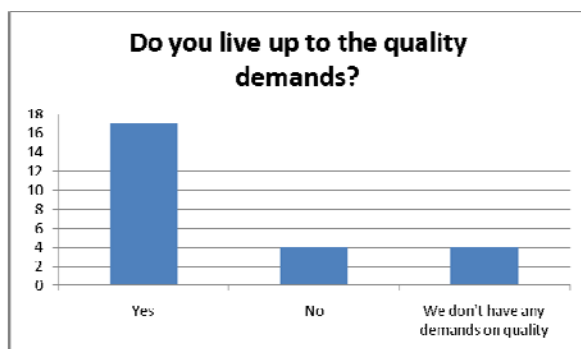
Specific demands in position accuracy in data specifications.

Do you live up to the quality demands in the data specifications you use?

Yes (68%)

No (16%)

We don't have any specifications on quality (16%)



Specific demands in thematic accuracy in data specifications.

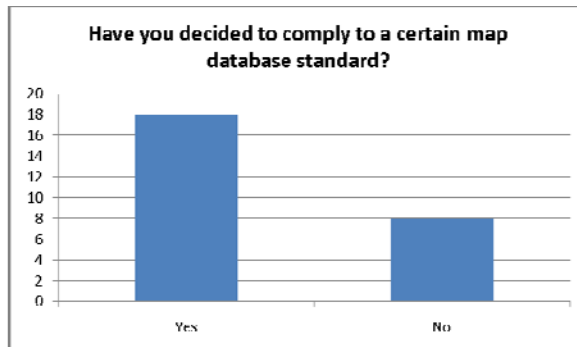
Have you decided to comply with a certain map database standard?

Yes (69%)

Which one?

No (31%)

Why? Which exchange method/format do you use to manage geographical data?



Ability to meet quality demands in data specifications.

Yes, database standard:

INTREST Standard

Use of Mapinfo

ArcGIS and maybe PostGIS/MapServer

At this moment we use Navstreets as standard map database in Flanders.

Navteq

SQL/SDE

ESRI - SDE

ESRI ArcGIS

Swiss TOPO and ESRI tools

The Standards are defined within the National project GIP.at (National Austrian Graph Integration Platform)

gdf

Transport Scotland is adopting International Standards for Display and Download of data - specifically Web Mapping Services 1.3.0, and Web Features Service 2.0 (when ratified).

Inspire/euroroads

We can produce data in most of the existing map formats in the market of today.

ATKIS

Official map database of NRW

Not decided yet. We should towards a SOSI standard for data that could be delivered to the Norway Digital.

Follows the defacto standards used by software providers and other (in-house) standards that apply within the own organization

No, exchange formats used:

The National Swedish Road database (NVDB) is implemented according to a Swedish standard (SS 63 70 xx) which makes it possible to combine the information in NVDB with other road information.

Applications for presentation and analysis is based on ESRI products.

Not yet, up to now we use proprietary formats

The NRA's Road Database is managed using ESRI's ArcGIS Suite of software

We use GIS formats (ArcView) and shape files

Please give us your view on how the data quality can be assured?

Responsibility for quality assurance by local players

We have a feature catalogue with strict definitions that should be followed. Some of the data are mandatory, and only values that are specified are allowed. We do also have a data controller function in every region. They are doing spot tests on different datasets according to a quality plan.

A contractor is obliged to deliver a certain quality. Each road authority or districts can verify this quality by controlling parts of the inventory they received. On the other hand, when the traffic sign database is used as source for a number of studies and research purposes, feedback concerning the data quality is always interesting and useful to make it better.

By means of random checks. Take into account the results of random checks to improve data quality.

We have a feature catalogue with definitions that should be followed. Some of the data are mandatory, and only values that are specified are allowed. Quality controls are performed on the database according to a quality plan.

To define accuracy specifications and control modalities

Give it a confidence rating

By directives and using standards

By a national data platform operator dedicated to monitor and assure the defined quality level

By establishing data collection standards which must be complied with

In GDDKIA we use a programme dedicated for Data Quality Assurance in order to avoid to put wrong data to the geographical databases

Validation runs and field survey verifications

Data quality depends on data transmission modalities (regularity, exactitude...) by different regulatory authorities. A regulation modification could be studied which would lead to impose these authorities to transmit data to the State.

"The ONLY way to make sure that a certain level of quality can be reached is to make sure the organization producing the data has got enough funding for doing so. The reality is that most organizations do NOT have money to raise the data sets to a higher level than required by their own organization and their own needs. Practically ALL attempts whatsoever where organizations or projects have tried to force data suppliers to produce data that the organization doesn't need themselves or otherwise getting played for or funding for have failed.

The only reasonable approach as far as we can see is to start using the data AS IT IS but providing information about the overall quality for that certain dataset. WHEN that dataset then is being used and there is a demand for higher quality those parties wanting that higher quality might consider adding funding to the data provider in order to raise the quality. VERY FEW data providers will just for the good sake put money into providing high quality data to third parties. Most organization has often not even fundings enough to maintain the data they need themselves."

In a close cooperation with other data suppliers, and end users of these data. We have a close cooperation on specific data in the Oslo area. Cooperation is essential.

"Feed back from users (eg taxi drivers who use the ISA system provides valuable feedback).

Delivery checks ("embedded" in the process) when delivering data to national databases (i.e. traffic regulations RDT and data to NVB).

Quality monitoring can help to develop the delivery process.

A portal may be able to offer tools for quality control.

Quality work requires resources - financial and human resources."

Metadata

Have you added any metadata to your road safety attribute data?

Yes (42%)

Please specify what metadata:...

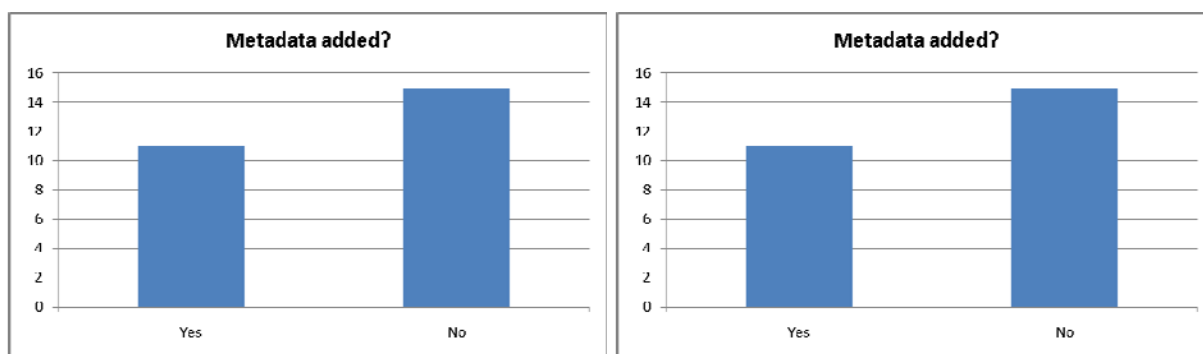
No (58%)

Are you planning to add metadata in the near future?

Yes (57%)

No

(43%)



Existence of metadata.

Planning to add metadata type:

Lineage is specified.

Update date - position accuracy

Specifications concerning referencing of location, time, etc

Basic metadata that is mandated by inspire

Cf. based on EN ISO 19115 and ISO/TS 19139 as specified by the overall framework of Ministry (ADÉ-LIE))

Too much data to list here. There are whole databases connected to the digital road networks with a great variety of data.

Validity, Geographic correctness

By whom, when, collection method, etc.

Benefits/drawbacks

In your opinion will other ongoing projects benefit from the work in Rosatte?

Yes (84%)

How?

Learned experiences/increased competence

Shared costs

Shared tools/applications

Shared organisation for collection and storing of data

Other...

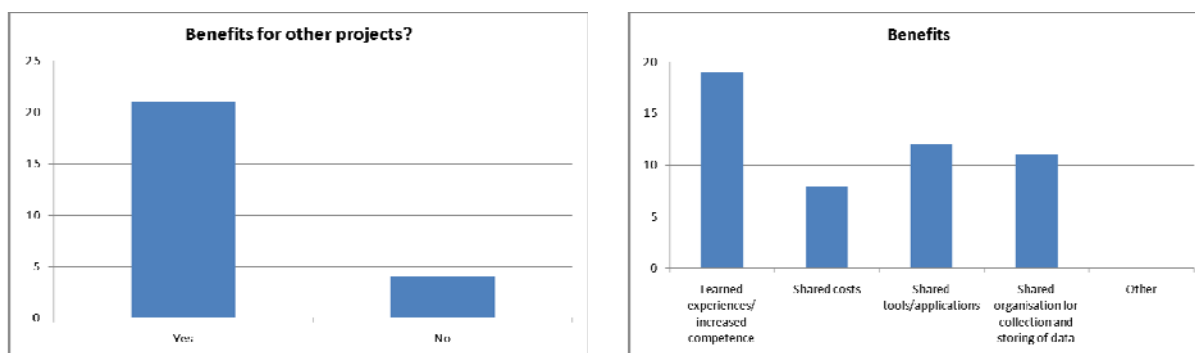
No (16%)

Please

specify

why

not



Benefits

Reasons why not:

Accuracy (and/or data generalization) is depending on the purpose for collecting data in the first place, and the purpose is given by legislation.

Not known at present which, if any other projects may be relevant.

Common central data storage is not anything new. It might be that some organizations might have some use for knowledge or tools provided in this project but many organizations already have tools and systems and there are many existing solutions in the market. So this side of the project is not likely to be the largest benefits of this project. Many similar projects have primarily contributed to the IT suppliers involved unless there was a VERY specific goal already from the start to produce something of common interest meeting demands that wasn't solved before.

Additional work on the same topic

Will third parties be asked to pay to use the data?

Yes (58%)

What model for payment is your organisation considering?

Payment according to:

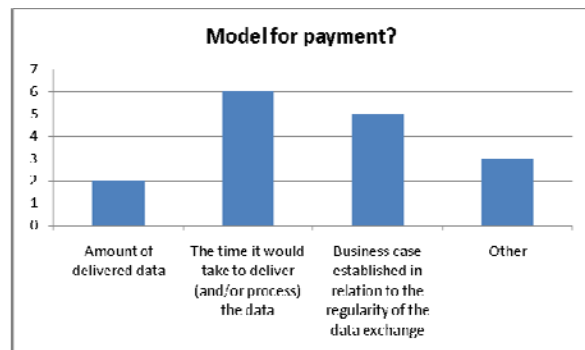
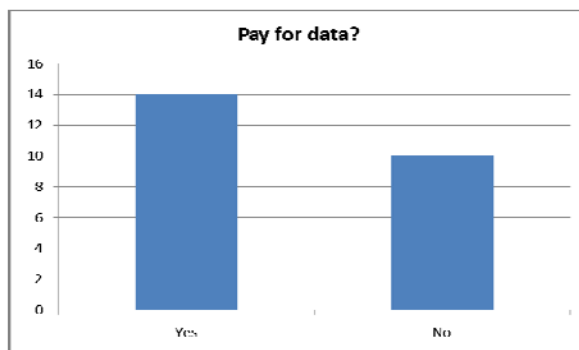
amount of delivered data

the time it would take to deliver (and/or process) the data

business case established in relation to the regularity of the data exchange

Other

No (42%)



Payment models.

Description of payment model:

Payment probably only for Elveg dataset (road network, speed limit, height restrictions, turning restrictions, one way street)

It is possible that some parties will need to pay for the use of some kind of data, but this still needs to be determined for Flanders. The agency of roads and traffic is prepared to provide the information for free, but this is no guarantee that it will be decided this way.

Implementation of ITS Action Plan can change the policy.

Depending on legislation.

It depends on usage purposes /commercial, non commercial

Although still under consideration, there may be a charge to prevent ambiguous/overly elaborate requests

Feedback

Please feel free to add a comment about the survey:...

I hope it will be very useful for the traffic safety specialist of the EU.

Maybe this questionnaire should be answered by only one person within NPRA (responsible for policies).

I answered the questionnaire for the Flemish government, Department Mobility and Public Works

Some comments: Q-19 "Do you live up to the quality demands in the data specifications you use?" YES Partly!!

We do not know how we fulfil the demands from map providers documented in the product specification for ROSATTE (as it has not been specified).

Northern Ireland Roads Service has not made a decision to be involved in this project.

We are interested to get more information and news about the state of the ROSATTE project and the main findings and results.

Question 25 - not yet considered

The questionnaire more relevant to another LRA division - Traffic Safety Division, but not for Traffic Information and Management Division.

No apparent means of saving the survey data to continue later or to check back on responses. With regard to the question on "delivering data to a central data store would the availability of data of neighbouring administrative divisions (municipality, county, region, country) be a benefit/incentive for delivering data" TS responds that, "apart from at the immediate vicinity of the interfaces between the national Trunk Roads and the local roads such information would be superfluous to requirements and could encumber the functioning of SERIS." and to the question on "The road safety attributes discussed are being of importance for the activities of several actors. In your country, are you aware of demands from third party companies or organisations wanting to use road safety attributes, and which would be interested in a near-permanent update of the data?" it has not been possible to ascertain what requests have been made. It may be possible to do so if a response is necessary and to the question on "planning to add metadata in the near future" the answer is "Possibly to UK Gemini 2 standards."

Well. It is rather hard to make a questionnaire that will fit all organizations that is being asked. Also the questionnaire might require knowledge in the specific field of Road Safety that is just a small sector of all data concerning road and traffic.

Anyhow: Thx for the survey and wish you the best of luck with your project!

3.2 Map Providers, Service Providers and Others

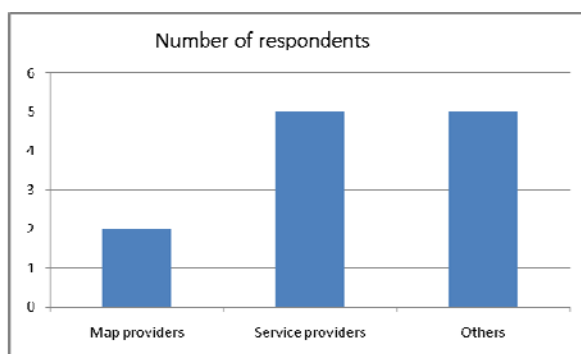
Administration

Are you representing a

Map provider

Service provider (e.g. software)

Other (e.g. car manufacturer, end user organisation)



Number of respondents - Map Providers, Service Providers and Others

There were two answers from TeleAtlas and one from Navteq. As the answers from TeleAtlas only differed in a couple of responses with free text the answers were analyzed as coming from two mapproviders (both comments from TeleAtlas are taken into consideration).

Geoportal or other data store

Several advantages can be found by setting up a central data store. In your opinion, what benefits can you see from a joint effort between road authorities, map makers or other parties in setting up a ROSATTE data store?

Easier access to data

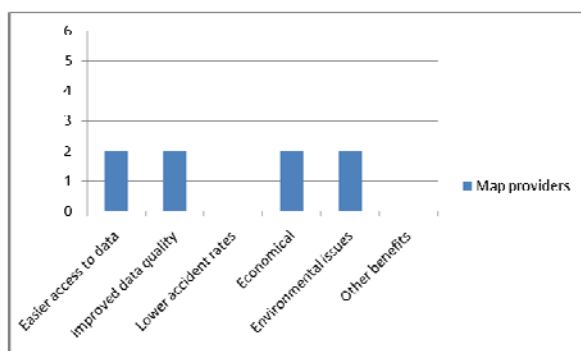
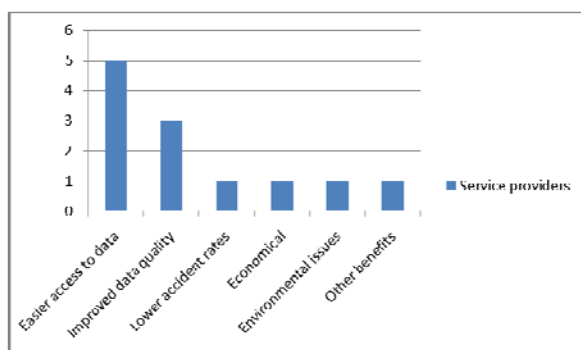
Improved data quality

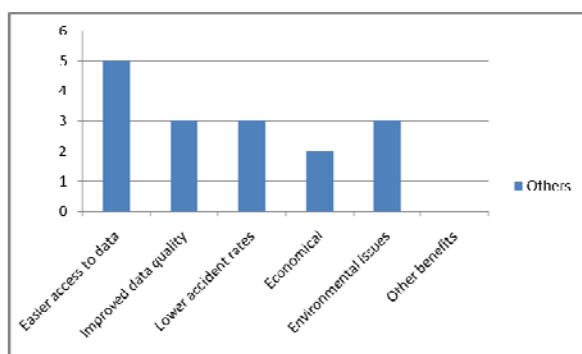
Lower accident rates

Economical

Environmental issues (e.g. lower fuel consumption)

Other benefits...





Benefits found by setting up a geoportal (central data store).

Comments given to "Other benefits"

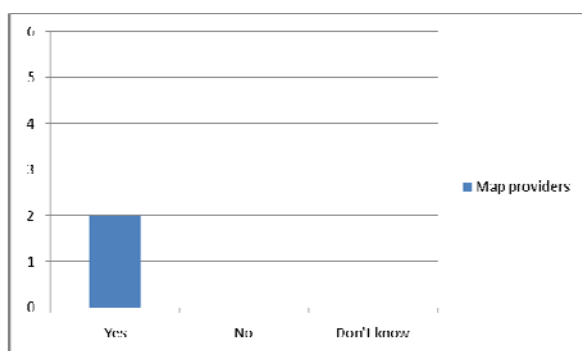
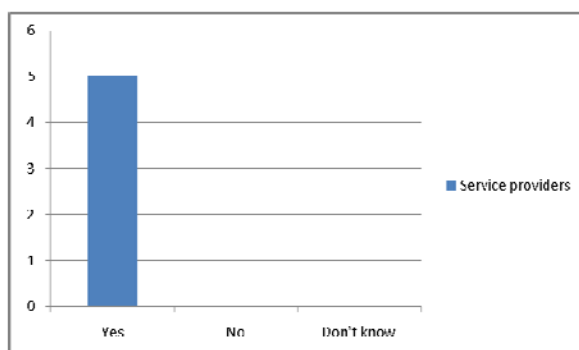
Easier access to data will hopefully result in lower accident rates and more environmental navigation in the long run

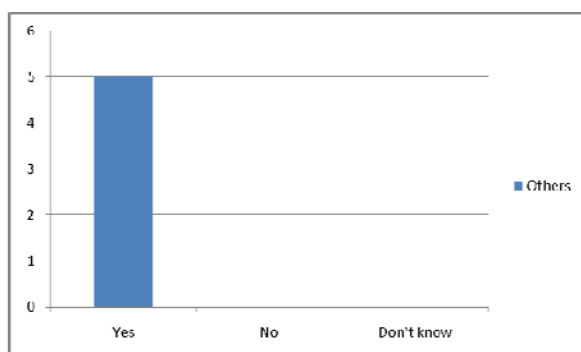
Would a geoportal be of help when searching for data instead of having to turn to several organisations (or other organisations than your own) in a country/countries to harvest the data needed?

Yes (Map Provider 100%, Service providers 100%, Others 100%)

No, because... (Map Providers 0%, Service providers 0%, Others 0%)

Don't know (Map Providers 0%, Service providers 0%, Others 0%)





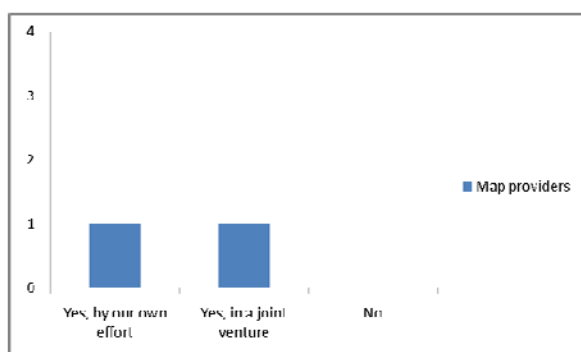
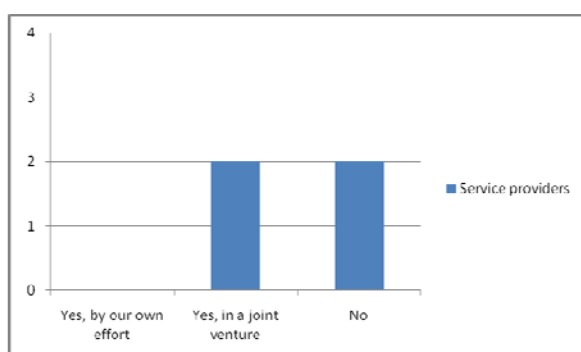
Geoportal as help when searching for data.

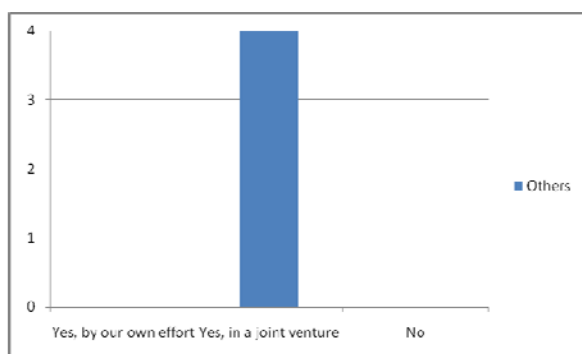
Would you be interested in building a geoportal either by your own effort or in a joint effort with other authorities, map providers or software providers?

Yes, by our own effort (Map Provider 33%, Service providers 0%, Others 0%)

Yes, in a joint venture (Map Providers 67%, Service Providers 50%, Others 100%)

No, because.... (Map Providers 0%, Service Providers 50%, Others 0%)





Interest in building a Geoportal.

Comments on "Interest in building a Geoportal":

No, because we perceive ourselves mostly as users of the data for different services not as providers.

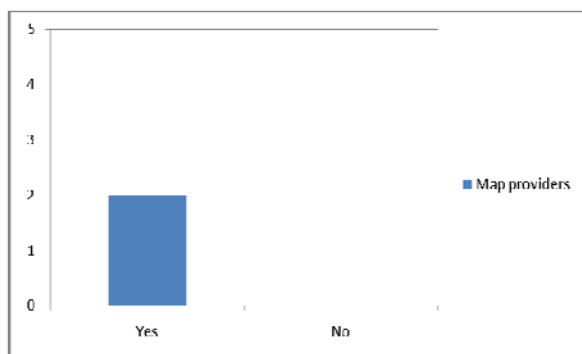
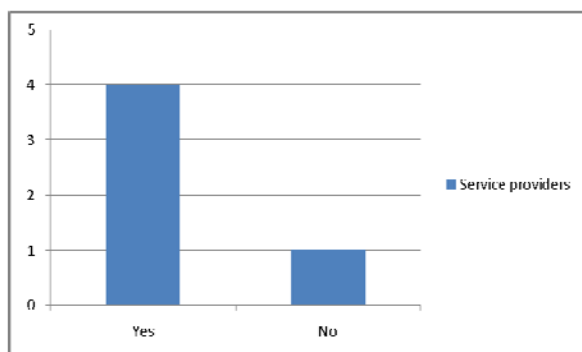
We are a road safety association. It's not our job to build

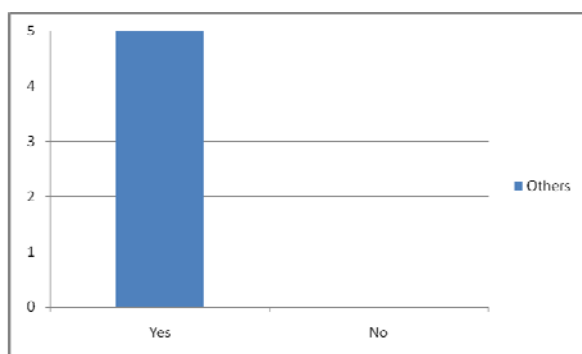
Data quality

Do you have specific demands in data specifications on thematic accuracy (attribute value correctness)?

Yes (Map Providers 100%, Service Providers 80%, Others 100%)

No (Map Providers 0%, Service Providers 20%, Others 0%)



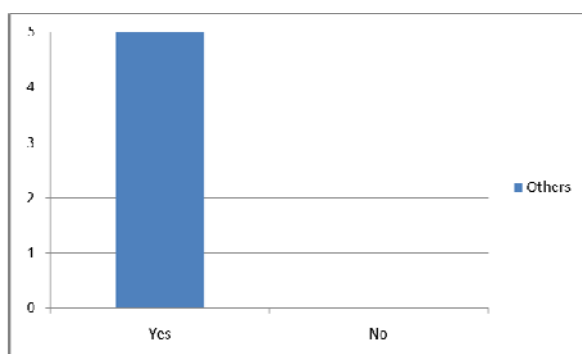
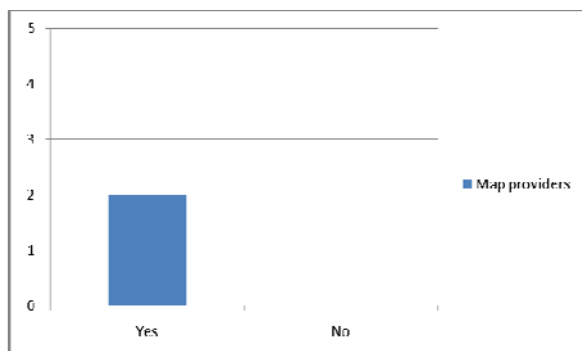
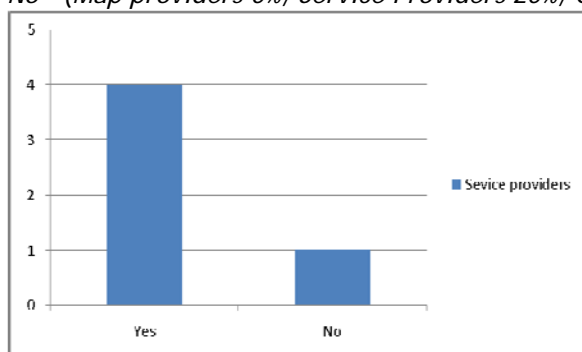


Specific demands on thematic accuracy.

Do you have specific demand in data specifications on position accuracy?

Yes (Map Providers 100,% Service Providers 80%, Others 100%)

No (Map providers 0%, Service Providers 20%, Others 0%)



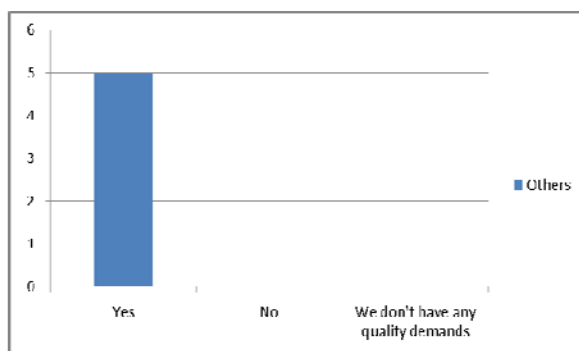
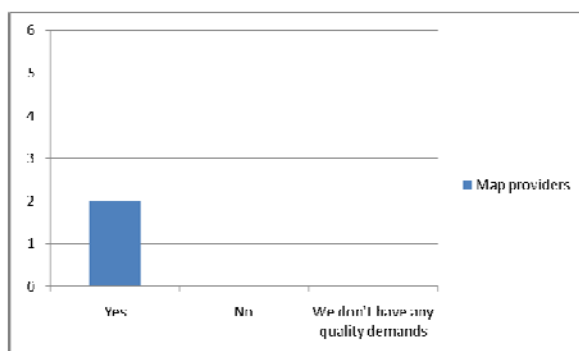
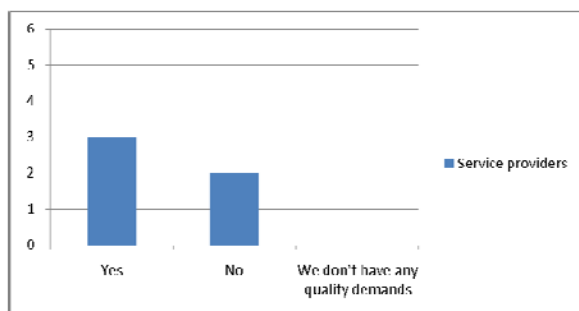
Specific demands on position accuracy.

Do you live up to the quality demands in the data specifications you use?

Yes (Map Providers 100%, Service Providers 60%, Others 100%)

No (Map providers 0%, Service Providers 40%, Others 0%)

We don't have any specifications on quality (Map providers 0%, Service Providers 0%, Others 0%)



Ability to meet quality demands in data specifications.

Do you feel that there will be differences in data quality depending on if the data is available free of charge or not?

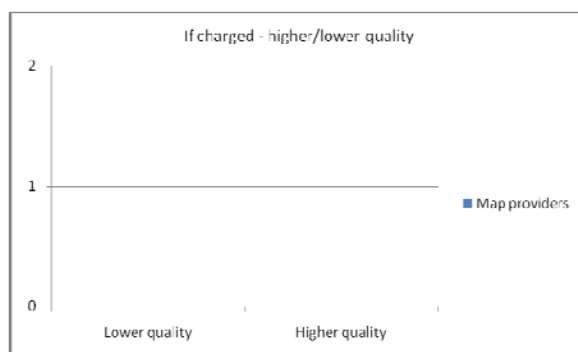
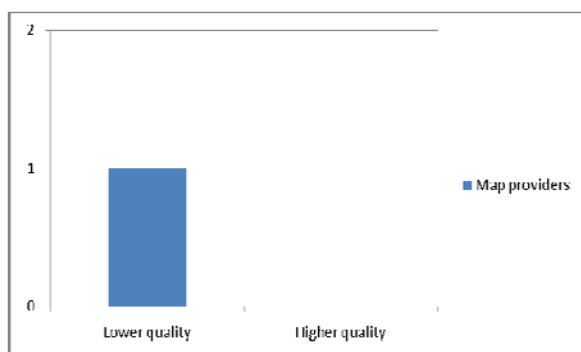
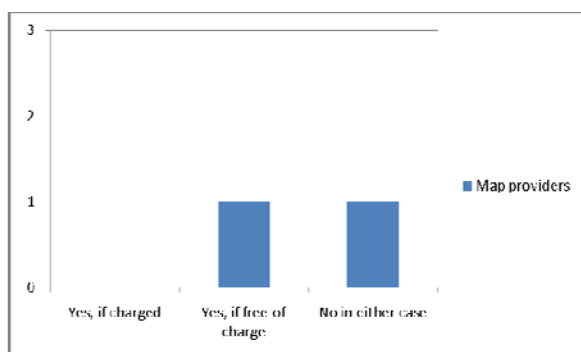
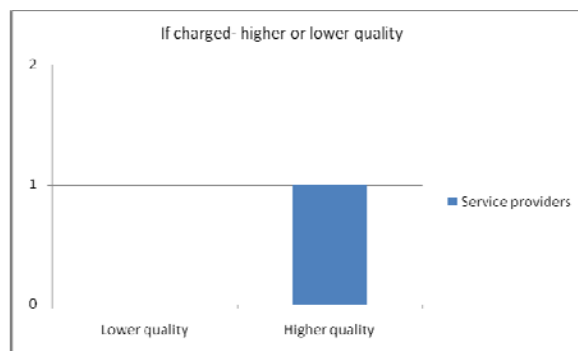
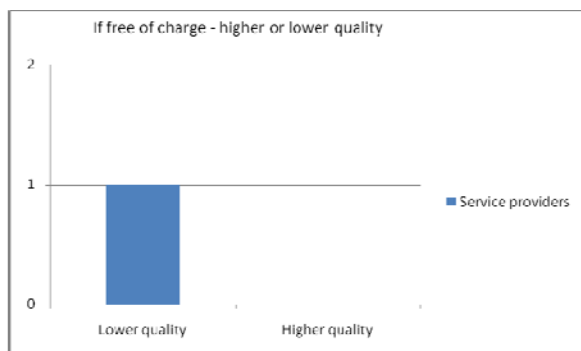
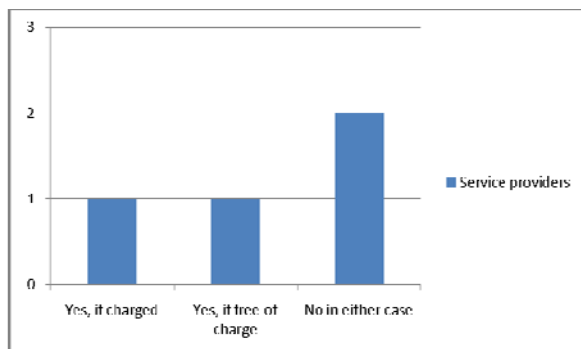
No in either case

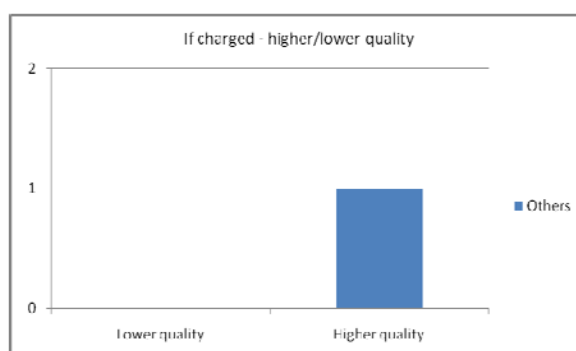
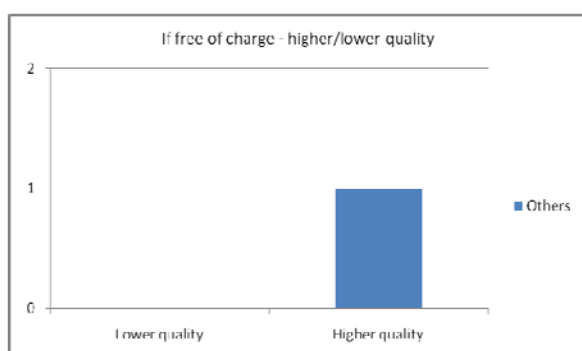
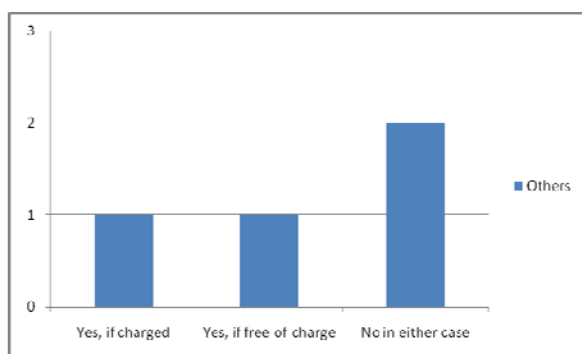
Yes, if free of charge

Higher quality

Lower quality

Yes, if charged
Higher quality
Lower quality





Dependence between data quality and cost for data.

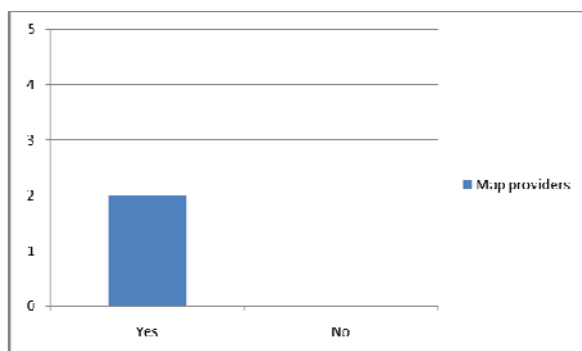
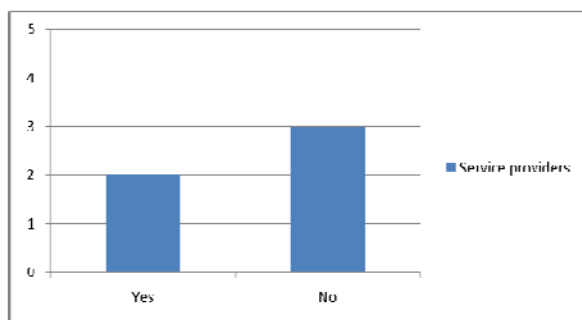
Have you decided to comply to a certain map database standard?

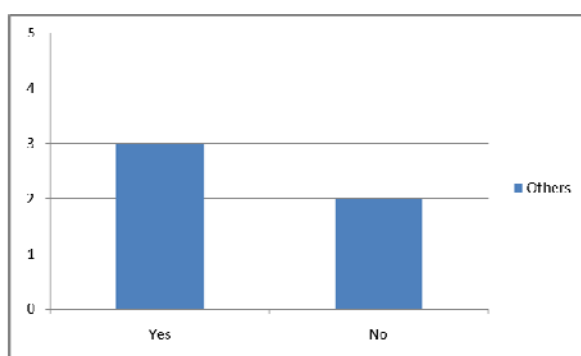
Yes (Map providers 100%, Service providers 40%, Others 100%)

Which one?

No (Map providers 0%, Service Providers 60%, Others 0%)

Why? Which exchange method/format do you use to manage geographical data?





Use of map database standards.

Comments on "Map database standards mentioned":
That provided by the big two map providers and ISO191xx

Comments on "Exchange method/format used":
use of different data management methods
Currently we maintain our own map database standard but we are also adapting other sources/standard (Open street map, GDF)
Depends on the format used by who delivers the data

Feedback on the survey

Service providers' comments about the survey:
The possible use of ROSATTE interface directly from ITS applications should be investigated.
Generally, we feel it is crucial to open up accessibility to data before putting too much quality requirements to the data. Viable and cheap methods for exchange network references between different map databases remain a major blockage to the access and use of data. So far, only exchange on merely geographic level is standardised.

APPENDIX 5 : Working models and legal aspects

This appendix gives a detailed overview of three possible working models for ROSATTE, currently in application in different parts of Europe:

1. State/local government controls (in use in Sweden and Flanders)
2. Service delegations (in use in Bavaria)
3. Public Private Partnership (in use in France)

1. State/local government controls - Sweden and Flanders

Two cases of state/government control will be described in this section: case of Sweden (1.1) and case of Flanders (1.2).

1.1 Case of state/local government controls - Sweden case

Swedish Transport Agency and Swedish Transport Administration are coordinating the Swedish national road database (NVDB) and the Swedish national database of traffic regulations (RDT). Descriptions of how these two databases work are provided in this section.

1.1.1 NVDB - The Swedish national road database

NVDB stands for the Swedish national road database and is the result of a government commission that the Swedish Road Administration got in 1996.

NVDB includes a reference network and a large amount of data, features, connected to the network. It is used by both public and private actors.

The Swedish Transport Administration is the responsible authority for NVDB.

NVDB is operated in cooperation between the Swedish Transport Administration, Swedish municipalities and county councils, the forestry industry, the Swedish Transport Agency and the Swedish mapping, cadastral and land registration authority.

The NVDB activities are organized on the basis of a workflow - a process - that include the following main elements:

- **Collect and up-date data**
Data is collected and up-dated in collaboration between the cooperating parties - the Swedish Transport Administration is responsible for the coordination of the work needed.
- **Compile data**
The data is compiled, quality declare and stored in a central national road database operated by the Swedish Transport Administration.
- **Provide data/information**
The data/information is to be provided to meet the need for basic road data. Public and commercial operators are all able to use basic road data for their purposes without discrimination.

1. Motivation for collaborating in the working model

The government commission states that the operation of NVDB shall be consistent with demands and needs of all parties.

The NVDB Council is a joint forum, for the parties of NVDB, whose task is to deal with important issues concerning the operation and development of NVDB.

Increased availability, usage and quality of data are some of the most important benefits identified that motivates the participants to collaborate. Better use of data collected using public funding is also a comprehensive justification for collaboration.

The workflow - the process - also provides benefits such as quality controls (at data delivery) and ability to use of common routines to make data available to users.

2. Role of each actor in the system's creation phase

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role				Comments
	Enacting Authority	Data Provider	Data Store Operator (local, regional)	Data Store Operator (national - NVDB)	
Swedish Transport Administration	X	X		X	
Swedish municipalities	X	X	X		A handful of selected municipalities participated as test partners in the creation phase.
Forestry industry		X	X		Participated as test partners in the creation phase.
Swedish Transport Agency	X	X		X	Data store operator of national database of traffic regulations.
Swedish mapping, cadastral and land registration authority		X			Supplier of road network data (and to some extent even road data) for road operators with which SRA had not yet established data supply agreements.

3. Role of each actor in the operation phase

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role				Comments
	Enacting Authority	Data Provider	Data Store Operator	Data Store Operator (national -	

			(local, regional)	NVDB)	
Swedish Transport Administration	X	X		X	
Swedish municipalities	X	X	X		
Forestry industry		X	X		
Swedish Transport Agency	X	X		X	Data store operator of national database of traffic regulations.
Swedish mapping, cadastral and land registration authority		X			Still supplier of road network data (and to some extent even road data) for some road operators where data supply agreements still needs to be established.

4. Advantages/disadvantages of being involved in the working model for each actor

Actor	Advantages	Disadvantages
Swedish Transport Administration	<ul style="list-style-type: none"> • Common definitions for road data. • Common exchange formats. • Better use of data collected using public funding. • Better cooperation between actors contributing to the data chain. 	<ul style="list-style-type: none"> • Complex data chain from local authorities to the data store operator on national level. • Requires a solid business model. • May cause problems financially in the long run.
Swedish municipalities	<ul style="list-style-type: none"> • Common definitions for road data. • Common exchange formats. • Better use of data collected using public funding. • Increased access to data from neighboring municipalities and other road operators. 	<ul style="list-style-type: none"> • Complex data chain from local authorities to the data store operator on national level. • Requires a solid business model.
Forestry industry	<ul style="list-style-type: none"> • Common definitions for road data. • Common exchange formats. 	<ul style="list-style-type: none"> • Complex data chain from local parties to the data store operator on national level. • Requires a solid business

	<ul style="list-style-type: none"> Increased access to data from other road operators needed to manage the transport requirements of the forest industry. 	model.
Swedish Transport Agency	<ul style="list-style-type: none"> Common definitions for road data. Common exchange formats. Better use of data collected using public funding. 	<ul style="list-style-type: none"> Complex data chain from local authorities to the data store operator on national level. Requires a solid business model.
Swedish mapping, cadastral and land registration authority	<ul style="list-style-type: none"> Common definitions for road data. Common exchange formats. Better use of data collected using public funding. 	<ul style="list-style-type: none"> Complex data chain from local authorities to the data store operator on national level. Requires a solid business model.

1.1.2 RDT - The Swedish national database of traffic regulations

A directive from the Swedish government stipulates that a number of authorities (specifically the Road Administration, 21 regional authorities and 289 local municipalities) has to enter their traffic regulations into a database, and at the same time making them officially announced on a specific web site. The Swedish Transport Agency is responsible for the IT-application including the database and the web site. The directive enters into force on 1st July 2010.

Traffic regulations not published on the website are not valid. This makes it simple concerning the completeness - the system covers all valid traffic regulations. Either in advance or after the traffic regulation has entered into the database, key attributes (i.e. speed limit) are extracted from the regulation document and stored in a separate area. Also a connection to the digital road network based on the National Road Data Base is done.

In a second step the structured data for each traffic regulation is processed by the Swedish Transport Agency into applicable traffic rules. The result will be features (traffic rules) connected to the National Road Data Base.

The Swedish Transport Agency in cooperation with the Swedish Transport Administration provides a system for final distribution of the traffic rule data to end users, application providers and others. The system for dissemination is planned to be in operation from January 2012.

1. Motivation for collaborating in the working model

As there is a law in Sweden prescribing that all traffic regulations must be delivered to the national database of traffic regulations (RDT) - and the RDT database is operated by the Swedish Transport Agency - the problem of motivation has been solved.

2. Role of each actor in the system's creation phase

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role				Comments
	Enacting Authority	Data Provider	Data Store Operator (national - NVDB)	Data Store Operator (national - RDT)	
Swedish Transport Agency	X	X		X	Data store operator of national database of traffic regulations.
Swedish Transport Administration	X	X	X		Data store operator of NVDB which is the database that holds traffic rules resulting from traffic regulations.
Swedish municipalities and Swedish county administrative boards	X	X			A handful of selected representatives of each stakeholder group participated as test partners in the creation phase.
Local Swedish police authorities	X	X			A handful of selected representatives of each stakeholder group participated as test partners in the creation phase.

3. Role of each actor in the operation phase

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role				Comments
	Enacting Authority	Data Provider	Data Store Operator (national - NVDB)	Data Store Operator (national - RDT)	
Swedish Transport Agency	X	X		X	Data store operator of national database of traffic regulations.
Swedish Transport Administration	X	X	X		Data store operator of NVDB which is the database that holds traffic rules resulting from traffic regulations.
Swedish municipalities and Swedish county admin-	X	X			

istrative boards					
Local Swedish police authorities	X	X			

4. Advantages/disadvantages of being involved in the working model for each actor

Actor	Advantages	Disadvantages
Swedish Transport Agency	<ul style="list-style-type: none"> Nationally uniform handling of traffic regulations. Completeness <ul style="list-style-type: none"> All traffic regulations gathered in a national database. All traffic regulations officially announced on a specific web site. The resulting traffic rules connected to the national Road Data Base (NVDB). 	<ul style="list-style-type: none"> Complex data chain from local parties to the data store operator of traffic regulations (RDT) on national level.
Swedish Transport Administration	<ul style="list-style-type: none"> Nationally uniform handling of traffic regulations. Quality assured data supply of traffic rules to NVDB. 	<ul style="list-style-type: none"> Complex data chain from local parties to the data store operator of traffic rules (NVDB) on national level.
Swedish municipalities and Swedish county administrative boards	<ul style="list-style-type: none"> Nationally uniform handling of traffic regulations. 	
Local Swedish police authorities	<ul style="list-style-type: none"> Nationally uniform handling of traffic regulations. 	

1.2 Case of state/local government controls - Flanders case

Traffic sign database Flanders

The traffic sign database of Flanders contains all traffic signs along all roads in Flanders (the regional roads, highways, municipal roads).

This traffic sign database was made using the mobile mapping technology. The Flemish government has financed the development of this database.

Each respective road authority is responsible for keeping the database up to date.

1. Motivation for collaborating in the working model

The legislation on the Belgian road network is an authority of the federal government. However, the competence of the construction, the maintenance and management of the roads is assigned to the 3 regional governments (the Flemish region, the Brussels Capital region and the Walloon region), the provinces and the cities and municipalities. The regions are responsible for the motorways, highways, the regional and the main secondary roads. The provincial roads are partially secondary roads, and partially local roads. The rest of the road network is for the cities and municipalities.

In Flanders, it is planned in the coming years to divide all the provincial roads among the Flemish region (secondary roads) and the cities and municipalities (local roads).

2. Role of each actor in the system's creation phase

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role				Comments
	Enacting Authority	Data Provider	Data Store Operator (local, regional)	Data Store Operator (national - NVDB)	
Flemish Ministry, Department Mobility and Public Works	X	X	X		
Flemish Ministry, Agency for Roads and Traffic	X	X	X		
Flemish Municipalities					

3. Role of each actor in the operation phase

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role				Comments
	Enacting Authority	Data Provider	Data Store Operator (local, regional)	Data Store Operator (national - NVDB)	
Flemish Ministry, Department Mobility and Public Works	X	X	x		
Flemish Ministry, Agency for	X	X	X		

Roads and Traffic					
Flemish Municipalities	X	X	X		

4. Advantages/disadvantages of being involved in the working model for each actor

Actor	Advantages	Disadvantages
Flemish Ministry, Department Mobility and Public Works	<ul style="list-style-type: none"> Supporting and facilitating several operational processes for the road authorities (Design; Management; Traffic Management; Drawing up and control 'Supplementary regulations') Providing an overview on the actual situation of the traffic signs along all Flemish roads using the central data store Providing basic data for all kinds of purposes (Traffic guidance; Speed maps; Intelligent Transport Systems; Correlation parameters; Asset management) 	<ul style="list-style-type: none"> Cost of the implementation project Maintenance costs
Flemish Ministry, Agency for Roads and Traffic	<ul style="list-style-type: none"> Supporting and facilitating several operational processes for the road authorities (Maintenance and reparation; Design; Management; Follow-up of contracts); Providing an overview on the actual situation of the traffic signs along all Flemish roads using the central data store Providing basic data for all kinds of purposes (Speed maps; Intelligent Transport Systems; Correlation parameters; Asset management) 	<ul style="list-style-type: none"> Cost of the implementation project Maintenance costs
Flemish Municipalities	<ul style="list-style-type: none"> Supporting and facilitating several operational processes for the road authorities (Maintenance and reparation; Design; Management; Traffic Management; Follow-up of contracts; 	<ul style="list-style-type: none"> Maintenance costs

	Drawing up and control 'Supplementary regulations') <ul style="list-style-type: none"> • Providing an overview on the actual situation of the traffic signs in the neighbouring municipalities using the central data store • Providing basic data for all kinds of purposes (Traffic guidance; Speed maps; Intelligent Transport Systems; Correlation parameters; Asset management) 	
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2. Case of service delegation - France

Description of the French motorways service delegation

French private motorway companies are in charge of more than 8 500 km of the French motorway network under the rule of public service delegation. More precisely, private motorway companies are bound to the State by concession contracts. It means that motorways all belong to the French state but are granted to private companies. All operations of management and all investments are done by the motorway companies, and they pay themselves by applying a fee to the drivers using the motorway. The amount of the fee is defined in the service delegation contract.

Speed limit regulation and management

A speed limit regulation always outcomes from a local public authority ("département" = county). However, motorway companies can be associated to the decision of a regulation, and concretely motorway companies are (nearly) always at the origin of the regulation by proposing the speed limits to be applied.

A motorway company is responsible of the speed limit signs on its network. Each private motorway company manages its own speed limits database (different software and various internal formats).

Centralization of speed limits

ASFA is the association which gathers French private motorway companies.

In 2006 ASFA managed to start building up a national motorway speed limits database.

The central data store is operated by Autoroutes Trafic, a company which belongs to the nine most important French private motorway companies and which is already in charge of traffic data collection and delivery to service providers.

Even though ASFA focuses in the first place on speed limits, other safety attributes can be provided using the same mechanisms. This is included in their roadmap.

1. Motivation for collaborating in the working model "Service Delegation"

French Transport Administration grants the management and the extension investments of the motorway network to private companies. Thus they do not handle the maintenance of the network and the related investments. Motorway companies get the grant of the network for 20 or 30 years which allow them to build long term business models. Beside that

they owe a public services mission to the French Transport Administration; one of these services is to take actions for the improvement of road safety.

ASFA is the common voice of French motorway companies for the study of user's safety aspects and drives private motorway companies' common policy regarding safety aspects. Given the implication of motorway companies in ASFA, their collaboration to safety related projects is rather easy to obtain. Once ASFA has committed itself to tackle certain subject to the French State, its members (the motorway companies) take action to deal with this subject.

The will to tackle a subject can also come directly from a motorway company. In this case the collaboration of other companies can be more difficult to gain.

Autoroutes-Trafic is the frontend company of the system. It is the one who collects the data from all motorway companies and who can deliver up-to-date data to third parties. It is the one who builds up the business model regarding traffic data delivery or safety attributes delivery.

As Autoroutes-Trafic is a subsidiary of motorway companies, it also makes things easier to get collaboration from all parts. For example in the case of speed limits database management, all motorway companies provide static speed limits data to Autoroutes-Trafic to feed a central database.

2. Role of each actor in the system's creation phase

The only difference between creation and operation is that ASFA stops acting as data provider and local data store operator once the service has been started.

- French Transport Administration
 - Enacting authority
- Local registration authority(county)
 - Enacting authority
- Motorway companies
 - Enacting authority, Data provider, Local data store operator
- ASFA / Autoroutes-Trafic
 - Data provider, Local data store operator, Data store operator

ASFA originated the collection of speed limits information by motorway companies and its centralization through the Autoroutes-Trafic entity.

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role					Comments
	Enacting Authority	Data Provider	Local Data Store Operator (motorway company)	Data Store Operator	Information Provider	
French Transport	X					

Administration						
Local registration authority(county)	X					
Motorway companies	X	X	X			
ASFA / Autoroutes- Traffic		X	X	X		ASFA and Autoroutes Traffic managed to convince motorway companies of the need to collect and centralize the speed limits information

3. Role in the operation phase

- Local registration authority(county)
 - Enacting authority
- Motorway companies
 - Enacting authority, Data provider, Local data store operator
- ASFA / Autoroutes-Traffic
 - Data store operator

Roles according to D1.2 chapter 4.1 table 2.

Actor	Role					Comments
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French Transport Administration						
Local registration authority (county)	X					
Motorway companies	X	X	X			
ASFA / Autoroutes- Traffic				X		

4. Advantages/disadvantages of being involved in the working model "Service delegation"

Each actor can find advantages and disadvantages in the case of public service delegation:

French Transport Administration

Advantage: Still owns the motorways but is not in charge of the network maintenance and does not make any investment

Disadvantage: No control on the motorway companies management and organisational aspects

Local registration authority (county)

Advantage: The one who takes the decision of the speed limits regulations on the motorway network

Disadvantage: No other role than taking the decision

Motorway companies

Advantage: Users pay a fee for the use of the motorway network and services. Motorway companies' business model is built on it

Disadvantage: - Motorway companies have to do all financial investments

- Under the rule of the French Transport administration

- Business model built over 20, 30 or 50 years

- The public authority can ask for the ASFA safety attributes database for free as a part of the services owed by motorway companies

ASFA

Advantage: - Drives private motorway companies' common policy regarding safety aspects

- Is the common voice of motorway companies when discussing road safety issues with French transport administration

- Is the team leader in road safety European projects

Disadvantage: - Needs to make investments to build up and maintain the central data store

- Must convince motorways companies to stick to the project

- Hard work to keep up their motivation all the way long

Autoroutes-Traffic

Advantage: In charge of the central data store and data supplier for third parties. The one who can build a business model that would generate incomes for motorway companies and itself

Disadvantage: - Long process before providing data with full coverage to third parties

- Can initiate some strategy that will be rejected by the motorway companies

→ Its strategy is dependent on motorway companies' will

Actor	Advantages	Disadvantages

French Transport Administration	Still owns the motorways but is not in charge of the network maintenance and does not make any investment.	No control on the motorway companies management and organisational aspects.
Local registration authority (county)	The one who takes the decision of the speed limits regulations on the motorway network	No other role than taking the decision.
Motorway companies	Users pay a fee for the use of the motorway network and services. Motorway companies' business model is built on it.	<ul style="list-style-type: none"> - Motorway companies have to do all financial investments - Under the rule of the French Transport administration - Business model built over 20, 30 or 50 years - The public authority can ask for the ASFA safety attributes database for free as a part of the services owed by the motorway companies.
ASFA	<ul style="list-style-type: none"> - Drive the private motorway companies common policy regarding safety aspects - The common voice of motorway companies when discussing road safety issues with French transport administration - The team leader in road safety European projects 	<ul style="list-style-type: none"> - Need to make investments to build up and maintain the central data store - Must convince the motorways companies to stick to the project - Hard work to keep up their motivation all the way long
Autoroutes-Traffic	In charge of the central data store and data supplier for third parties. The one who can build a business model that would generate incomes for motorway companies and itself.	<ul style="list-style-type: none"> - Long process before providing data with full coverage to third parties - Can initiate some strategy that will be rejected by the motorway companies → Its strategy is dependent on motorway companies' will

3. *Case of public-private partnership - Bavaria*

1. *What is the motivation to the actors to engage in this collaboration model*

Central (road) authority	<ul style="list-style-type: none"> • Ensure with limited funds (in money and personnel) public functions, (which are not considered as core). In the case of ROSATTE, in particular of road data maintenance system operation and maintenance (for use by local enacting authorities) are the subject of 'outsourcing'. • Avoid build-up of additional, administrative capacity (with long term obligations) in times of budget scarcity • Public funding is focused on financing build-up phase of the data maintenance system (specification, development, implementation) according to predefined requirements. Some funding may be reserved to basic maintenance operations, where PPP-
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	<p>entity cannot generate own revenues.</p> <ul style="list-style-type: none"> • Expectations are that PPP-entity can bring in own assets (specific technology) and that will generate own revenues from the ppp activities. This implies that public funding needed may be lower than if build-up/operations were ensured by the public body itself.
Solution/Provider	<ul style="list-style-type: none"> • Availability of initial funding and sheltered market for longer term technological developments • By bringing own resources (technological, • Achieve a competitive advantage compared to the competitors • Chance to enter advantageous role for the supply of products and services in the region concerned
enacting authority	<ul style="list-style-type: none"> • Enacting authorities (on the ground) are not directly involved in the PPP. They are considered as users/customers of the system which operated under the ppp model

2. What is the role in the build-up phase?

Central (road) authority	<ul style="list-style-type: none"> • Central authority provides technical and organizational requirements on the system to be designed and operated • CA ensures access to other public resources needed for the PPP access (e.g. access to data ...) • CA provides funds for the build-up phase of the data maintenance system (specification, development, implementation) according to predefined requirements. • CA checks and approves the system implementation; • CA sets further conditions, rules and requirements for the operation phase (e.g. access conditions to ppp services for EA);
Solution/Provider	<ul style="list-style-type: none"> • Builds system and establishes organizational setup for the operations of the PPP and the system
Enacting authority	<ul style="list-style-type: none"> • Individual EAs are involved in the pilot operation phase for functional and acceptance tests

3. What is the role in the operation phase?

Central (road) authority	<ul style="list-style-type: none"> • Some funding by CA may be reserved to basic maintenance operations, where the PPP-entity cannot generate own revenues. • CA checks whether operational requirements are kept • No further involvement of CA outside agreed contributions during operation phase
Solution/Provider	<ul style="list-style-type: none"> • Operates system, markets ppp offerings to EA • May create further offerings on a commercial basis to customers
enacting authority	<ul style="list-style-type: none"> • Uses system

4. What are advantages/disadvantages of the PPP model

Advantages	Disadvantages
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PA can conceive and foster functions operations outside the restrictions of public administration framework	Long negotiation phase, limited further development of the functions over the PPP duration time after the investment phase, lock-in to initially chosen approach over the operation time.
PA increases range of manoeuvre/reach despite budget scarcity	Ensurance of quality and service levels in PPP operations is complex
Innovative approaches can be leveraged in the technical and organizational setup of service provision to EAs	Dependency/restriction to internal assets and developments of companies involved in PPP
Private paradigm of operation phase fosters functions/offerings with direct benefits to users (=costumers)	Incentives to EA for collaboration are missing