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Abstract

The main goal of this report was to define common quality and evaluation criteria for Compliance Assessment regarding traffic data. The EU Delegated Regulations (DRs) that came out of the ITS Directive, as follows: Delegated Regulation (EU) 2017/1926 (MMTIS), Delegated Regulation (EU) 2015/962 (RTTI), Delegated Regulation (EU) No. 886/2013 (SRTI) and Delegated Regulation (EU) No. 885/2013 (SSTP) state that the quality of the data is very important, but they do not provide guidance on what the actual quality represents. Within Working Group (WG) 5, the requirements stated in all the DRs were reviewed and the analysis of the current National Body (NB) practices was done. After consolidating the requirements and revising the work already done on data quality, and an analysis of the quality criteria established in several projects (EU-EIP, project Quantis), WG5 analysed the results in cooperation with WG3. As first result of this analysis, quality criteria were differentiated according to data type, which can be divided into dynamic as well as static data, and event type, which can be differentiated into planned and unplanned events. Finally, the Compliance Assessment forms were analysed and solutions regarding comparable definitions for quality criteria were added.

The outcome is only a first step towards integrating quality and evaluation criteria in the Compliance Assessment in a harmonised way. In future further adaptions will be needed depending on the new or enhanced quality frameworks, which define the quality critieria, that the NBs can make use of.

Abbreviations

Abbreviation	Meaning
CA	Competent Authority
DR	Delegated Regulation
EC	European Commission
EU	European Union
ITS	Intelligent Transport Systems
IND	Individual requirements
MMTIS	Multi Modal Travel Information Services
MS	Member State
NA	National Authority
NAP	National Access Point
NAPCORE	National Access Point Coordination Organisation for Europe
NB	National Body
Q	Questionnaire
RTTI	Real Time Traffic Information
SRTI	Safety Related Traffic Information
SSTP	Safe and Secure Truck Parking
TI	Traveller Information
WG	Working Group

Commented [LM1]: Gema Leiro García:

Should be added...?

EU - European Union

MMTIS - Multi Modal Travel Information Services

RTTI - Real-Time Traffic Information

SRTI - Safety-Related Traffic Information

SSTP - Safe and Secure Truck Parking

BE - Belgium

ES - Spain

LU - Luxembourg

DK - Denmar

LI - Litnuani

PL - Poland

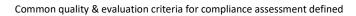




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1 Introduction

The importance of data quality is highlighted in the Delegated Regulations (DRs) that came out of the ITS Directive 2010/40/EU, as follows: DR (EU) 2017/1926 (MMTIS), DR (EU) 2015/962 (RTTI), DR (EU) No. 886/2013 (SRTI) and DR (EU) No. 885/2013 (SSTP). However, no detailed instructions and explanations on how the data quality and/or services will be assessed are given. This issue was approached through various projects and studies wanting to develop definitions of what data quality is and how to measure it. Within the EU-EIP project, quality criteria were defined by the partners in Europe. The ISO/TR 21707 data quality standard recommends six quality criteria that were taken as a base for our report, even though the EU-EIP project was more recent.

To reach the goal of establishing the quality and evaluation criteria it was necessary to analyse all four DRs with a focus on any mention of quality and evaluation processes for assessment. Other important resources include the review of the "Questionnaire for National Bodies" that was done in task 5.3 and the collection of individual requirements. At this point, the quality and evaluation criteria were elaborated with WG3 by means of several workshops that were organised with participants from both WG3 and WG5.

The work on the definition of (common) quality criteria and evaluation processes for Compliance Assessment consists of the following subtasks:

- 1. Analyse the DRs concerning the requirements for applying quality and evaluation criteria
- Analyse existing quality and evaluation criteria, applied for Compliance Assessment by National Bodies (NBs)/National Authorities (NAs)
- Collect and evaluate the answers of the "Questionnaire for National Bodies" (NAPCORE April 2022)
- 4. Collect individual requirements on the quality and evaluation criteria
- 5. Define requirements for the definition of quality and evaluation criteria for the work of WG3
- 6. Discuss with WG3 the requirements and how they could be used to define quality and evaluation criteria
- 7. Identify suitable quality & evaluation criteria via multi-stakeholder workshops
- 8. Discuss and agree upon (common) quality & evaluation criteria for Compliance Assessment amongst the Member States (MS)

Chapter 1 of this report provides a short introduction. The next chapter titled 'Contextual landscape' lists the results of previous projects and studies that tried to define what the quality of the traffic data consists of. Following this, the implemented processes to successfully define quality criteria are described in the chapter 'Methodology'. Chapter 4 titled 'Qualitative analysis' gives an analysis of each individual DR for the occurrence of quality criteria. Subsequently, the 'Review of the requirements by WG3' and the joint work of WG3 and WG5 on defining quality criteria is explained in chapter 5. Chapter 6 titled 'Compliance Assessment forms Analysis' gives an analysis of the forms prepared within WG5. Finally, a summary of all the work done in trying to define quality and evaluation criteria is provided in the conclusions of this report.

Commented [HP2]: Changed because "state of the art" is a phrase used to describe something that represents the highest level of development or advancement in a particular field at a given time, and that doesn't seem to be what is meant here. Alternative suggestions include: "status", "previous work", "background", or "context".



2 Contextual landscape

Traveller Information (TI) service concerns gathering, processing, and delivering traffic information to its consumers. There are obligations regarding the quality of such information service and its content. The service quality evaluation is especially important from a pan-European perspective, since the European Commission (EC) has mandated, by the ITS Directive and subsequent DRs, the MS to provide seamless traveller information service across Europe, ideally with a comparable quality.

Even though the EU -DRs state that the topic of quality is important, they do not provide a definition of "quality" or guidance on how to evaluate the quality of data/services. There have been several projects/studies to objectify the approach, e.g. the project Quantis's approach defined in ISO/TR 21707¹. The development of the definition of service quality has evolved in the European project EU-EIP² that defined quality criteria per DR.

There are different aspects of quality. From the user's perspective, it is important to not only get good quality content but also to get a good quality (actionable) description of the data as well as a reliable structure and delivery mechanisms. The ISO data quality standard recommends six fundamental measures of traffic data quality.

Accuracy – The measure or degree of agreement between a data value or set of values and a source assumed to be correct. It is also defined as a qualitative assessment of freedom from error, with a high assessment corresponding to a small error.

Completeness (also referred to as availability) – The degree to which data values are present in the attributes (e.g., volume and speed are attributes of traffic) that require them. Completeness is typically described in terms of percentages or number of data values. Completeness can refer to both the temporal and spatial aspect of data quality, in the sense that completeness measures how much data is available compared to how much data should be available.

Validity – The degree to which data values satisfy acceptance requirements of the validation criteria or fall within the respective domain of acceptable values. Data validity can be expressed in numerous ways. One common way is to indicate the percentage of data values that either pass or fail data validity checks

Timeliness – The degree to which data values or a set of values are provided at the time required or specified. Timeliness can be expressed in absolute or relative terms.

Coverage – The degree to which data values in a sample accurately represent the whole of that which is to be measured. As with other measures, coverage can be expressed in absolute or relative units.

Accessibility (also referred to as usability) – The relative ease with which data can be retrieved and manipulated by data consumers to meet their needs. Accessibility can be expressed in qualitative or quantitative terms.

Even though the EU-EIP approach is more recent and defines more precise quality criteria, derived from previous projects (see figure 1), it has been decided to base the classification of the present

Commented [HP3]: Table 1? I do not see Figure 1 in the vicinity. If it comes significantly later, please add a page

Commented [DM4R3]: I agree with Hana. This is the only Figure in the document. For the shake of simplicity should be easier to keep it as table 1.

Commented [HP5R3]: I see now that the Table 1 below is called "Table 1" at the top of it and "Figure 1" at the bottom. As mentioned by David, it would improve clarity to call the table below "Table 1" and rename the other Tables.

¹ ISO/TR 21707:2008 - Intelligent transport systems — Integrated transport information, management and control — Data quality in ITS systems

² Working on common Frameworks for the Quality of European ITS Services and their Data - European ITS Platform (itsplatform.eu)



document on a coarser methodology defined in the ISO standard, since it is an official and standardised procedure.

y			Applica	able for
	Defin	ition of Quality Criteria for RTTI and SRTI	Event Information	Status- Oriented Information
Level of Service	Geographical coverage	Percentage of the road network covered by the (content provision) service	x	X
Leve	Availability	Percentage of the time the (content provision) service is available	Х	Х
	Timeliness (start)	The time between the occurrence of an event and the acceptance of the event	Х	1
	Reporting period	The time interval for refreshing / updating the status reports		x
	Timeliness	The time between the end or (safety) relevant change of condition and the acceptance of this change	X	- 1
	(update)	The average age of the sensor data used in the most recent reporting period	٠	X
	Latency (content side)	The time between the acceptance of the event or its end or (safety) relevant change of condition and the moment the information is provided by the content access point	x	
Level of Quality		The time between the calculation of the reporting data and the moment the information is provided by the content access point	•	X
Level	Location accuracy	The relative accuracy of the referenced location for the published event with respect to the actual location of the actual event	X	
	Classification correctness			-
	Error Rate	Percentage of published status reports which show excessive deviations of a reported quantity (e.g. speed or travel time) versus the actual value or are otherwise determined as erroneous	•	Х
	Event coverage	Percentage of the events which are known to be correctly detected and published by type / class, time and location (i.e. detection rate)	x	-
	Report coverage	The percentage of reporting locations for which a status report is received in any given reporting period	-	x

Figure 1: Quality Criteria as defined by EU-EIP report (source EU-EIP)

3 Methodology

The goal of the document is to collect initial requirements for the (common) quality and evaluation criteria for Compliance Assessment, to be later used by the NBs/NAs in the Compliance Assessment processes. The classification of quality criteria is defined by the ISO/TR 21707 data quality standard (see Chapter 2). A stepwise approach was followed to define the relevant criteria:

- 1. Initial analysis yielding requirements from 3 different sources:
 - a. Review of DRs: Analysis of the DRs with a focus on any mentions of quality and evaluation criteria



- b. Experience gathered through a detailed questionnaire about the status of the NBs (see Milestone Report M5.2)
- c. Collection of individual requirements from NBs and CAs
- 2. Comparison and discussion of the requirements with WG3
- 3. Use of the Compliance Assessment forms for quality criteria selection and definition
- 4. Quality criteria workshops using the Compliance Assessment forms as a template to develop initial quality criteria
- 5. Definition of individual quality criteria, including threshold values

In the following subchapters, the methodology of the individual steps will be described.

3.1 Analysis phase

3.1.1 Delegated Regulations requirements review

The output of this subtask are the quality criteria as they are stated in the DRs. An analysis of the DRs of the ITS Directive was done by project partners from several perspectives and documented in internal reports:

- Requirements for quality and evaluation criteria (task 5.3)
- Requirements for random inspection
- Requirements for Compliance Assessment
- Requirements for documents
- Requirements for reporting
- Related studies
- Analyse EU-EIP sample self-declaration forms
- Other and literature

For this report only "Requirements for quality and evaluation criteria" and "Requirements for Compliance Assessment" were further processed, ideally in the form of a table with quality criteria in relation to each of the DRs.

3.1.2 Questionnaire for National Bodies – requirements review

In spring 2022, a questionnaire on the current NB/NA practices was circulated. In this part, the answers provided by the project partners were analysed from different perspectives:

- Quality and evaluation criteria response
- Compliance document response
- Supporting documents response

The responses were compiled together from the individual DR questionnaires and cleaned up for repeating text with a similar meaning as well as supplemented with a quantitative summary for each DR.

Commented [DM6]: Results of these questionnaires will be available as annex?



3.1.3 Collection of WG5 partners' individual requirements

An individual requirements template was developed to collect important issues not present in the previous two reviews. These individual requirements were factored in the requirements formulated from the questionnaire and the review of the DRs.

3.1.4 Requirements consolidation

In this part the findings from the preceding analyses were processed into a consolidated table of requirements. These requirements further served as a basis for the development of quality criteria.

3.2 Discussion of the requirements with WG3

The developed requirements were discussed with WG3 to further clean the formulations and to identify specific quality criteria to be developed by WG3 for NB/NA purposes. The output of this phase is an updated list of requirements and the identification of the quality criteria for Compliance Assessment.

3.3 Quality criteria development phase

While the previous phase was conducted with a scope as broad as possible to collect requirements on the quality criteria, this phase was focused solely on the must-do tasks of NBs.

3.3.1 Use of Compliance Assessment forms

In parallel, Compliance Assessment forms were developed within the scope of WG5. This task's output is to comment and update the assessment forms to match the findings of the analysis phase. This task aimed to align the expectations and requirements with the Compliance Assessment forms and vice versa. Since the compliance forms are integral to the Compliance Assessment, the quality criteria must be identified there. The compliance forms contain all the checks, but only a few items are related to quality criteria.

3.3.2 Quality criteria workshops using Compliance Assessment forms

In this task, individual quality criteria were identified and defined together with an initial threshold. In the form of a workshop, each Compliance Assessment form was analysed per row if the contained check/object relates to the quality criteria such as:

- Timeliness
- Completeness
- Accuracy
- Validity
- Coverage
- Accessibility



Simple binary yes/no checks are not considered as quality criteria from this perspective. For every identified criterion, a definition and threshold were developed in the several subsequent workshops, the consensual definition was accepted.

3.3.3 Individual quality criteria definition

In this task, the quality criteria from the individual Compliance Assessment forms were further refined and consolidated into a table and checked against the requirements identified in the analytics phase. The table of requirements consists of:

- Identification of the DR for which the quality criteria apply, together with a reference to the Compliance Assessment and the DR
- Quality criteria identification (number/code)
- Category of the quality criteria (completeness, timeliness, ...)
- · Name of the quality criteria
- Definition of the quality criteria
- Threshold for the assessment (initial for the first Compliance Assessment Trials)
- How will these quality criteria be checked?
- Optional comment

There will be a summary table and an individual table per identified quality criteria.

4 Qualitative analysis

This chapter provides a summary of the Annexes: Requirements for the definition of quality and evaluation criteria for Compliance Assessment.

4.1 Quality and evaluation criteria in the Delegated Regulations

This section analyses the individual DRs regarding the occurrence of quality criteria, either comparable to those defined in previous projects and used to evaluate the content of the data or used to surrounding elements, i.e., publishing information about the data and data delivery mechanisms. Four DRs were analysed, the content of subsections is divided per DR and rephrases most of the mentions of the quality and evaluation requirements in the documents.

4.1.1 SSTP 2013/885

The DR 'safe and secure parking places for trucks and commercial vehicles' (2013/885) mentions the subject of quality or explicit quality criteria in several places. Data shall be provided with at least a **minimum set** of parking descriptors, within a **minimal update interval** for static data ("no less than once a year") and a **minimal update interval** for dynamic data ("no less than once every 15 minutes"). It is important to ensure that the data provided is accurate and any changes should be reported promptly. Additionally, the information service should provide complete details on the percentage of parking places that have been registered.

The DR 'safe and secure parking places information' provides clear categories of the data together with a quantification of selected quality criteria. It can be evaluated by its completeness, timeliness,



accuracy, data update frequency, location accuracy, geographic data coverage, structural and data provision quality.

4.1.2 SRTI 2013/886

The DR 'safety-related traffic information' (2013/886) mentions quality issues or explicit quality criteria in several places and states that a minimum level of quality should be achieved. The data should belong to at least one of the 8 categories with a prescribed structure, data shall be accessible and provided in real-time. Data quality can be evaluated by its completeness and content of the technical reports by data providers that include (indicatively): data availability, data completeness data timeliness, data latency, data update frequency, location accuracy, classification correctness, event, report and geographic data coverage.

4.1.3 RTTI 2015/962

The DR 'real-time traffic information services' (2015/962) mentions the subject of quality or explicit quality criteria in several places. Publications on the National Access Point (NAP) **shall include information about the quality of the data** and the means used to monitor it. Furthermore, data shall be provided at an acceptable timeframe to enable the timely provision of real-time traffic information services. The data shall be regularly updated and/or corrected in a **timely manner** and accessible within a timeframe that ensures **the timely provision** of real-time traffic information services. They shall be **accurate and up to date**. Dynamic and static data shall be **timely updated** and processed in a **timely manner** and accessible **without delay**.

4.1.4 MMTIS 2017/1926

The DR 'multimodal travel information services' (2017/1926) mentions the subject of quality or explicit quality criteria in several places. Providers should have information regarding the **quality of data** they are providing, also including descriptions of how the accuracy of data is determined and how a provision of data in a timely manner is achieved. Moreover, the data should be updated and/or corrected in a **timely manner** as well as accessible within a timeframe that ensures **the timely provision** of travel information services. They shall be **accurate and up to date**.

4.1.5 Summary of requirements on quality criteria

There are quality criteria mentioned throughout the text of the individual DRs. However, the quality criteria are not separately defined. They are referred to by the DRs to be defined at a later stage in conjunction with the regular reporting from the MS to the EC, e.g. DR (EU) 2017/1926, article 10:

- "should include the <u>criteria</u> used to define the level of quality and the <u>means</u> used to monitor the quality" (source: SRTI) and
- "data referred to in paragraph 1 and the corresponding metadata including information on the <u>quality</u> thereof shall be accessible for exchange and re-use" (source: RTTI),
- "a description of the travel and traffic data listed or stored in the access point(s) and the travel
 information services available including connections with other services if applicable, as well
 as the information on the <u>quality</u> thereof" (source: MMTIS).



The table below summarises the content of the DRs categorised by quality criteria.

	SSTP	SRTI	RTTI	MMTIS
Accuracy	difference between reported data and real availability of parking places	-	-	-
Completeness	minimum set of parking descriptors (i.e., identification of parking, location, equipment info, number of places, contact,)	classes of static and dynamic information to be provided (art. 3); minimum set of attributes (i.e., location, category, description, driving advice)	classes of static and dynamic information to be provided (annex); minimum set of static data update (art. 8) minimum set of dynamic data update (art. 9) (i.e., type, location, condition, quality); properly describe the content and structure of this data using appropriate metadata	classes of static and dynamic information to be provided including the description of quality; metadata to allow discovery service
Validity	value type and range of values (i.e. location as latitude/longitude) format to be used DATEX II (CEN/TS 16157)	format to be used DATEX II (CEN/TS 16157)	standardised location reference method (art. 12, art. 9) minimum set of traffic data update (art. 10) format to be used DATEX II (CEN/TS 16157) (art. 5, art. 6)	format to be used NeTEx CEN/TS 16614 and Regulation (EU) No 454/2011; SIRI CEN/TS 15531 Delegated Regulation (EU) 2015/962
Timeliness (data, metadata)	minimal update interval for static data: "no less than once a year"; minimal update interval for dynamic data: "no less than once every 15 minutes"; reporting time for changes of the situation and closure of parking	timely renewal and quality of data made available through their access point	timely provision of the real-time traffic information service; static and dynamic data shall be regularly updated and shall in a timely manner correct any inaccuracies; provision of static data in advance; timely update and modify when	update of static and dynamic travel and traffic data when changes occur in timely manner; timely correct any inaccuracies

Commented [LM7]: Gema Leiro García:
Why is the content of the DRs ordered in this way? Shouldn't
MMTIS, RTTI, SRTI and finally SSTP go first? To be consistent
with the document and with the order of the Delegated
Regulations



	areas to the NAP: immediately		changed of road static and dynamic data (art. 9); modification of real time data as soon as possible accessible to end- users without delay (art. 9)	
Coverage	percentage of parking places registered in the information service; provision on TEN-T	information service provision on TEN-T	information service provision on TEN-T	information service provision on TEN-T
Accessibility	way of provision: as defined by Directive 2003/98/EC	way of provision: as defined by Directive 2003/98/EC	way of provision: as defined by Directive 2003/98/EC	way of provision: as defined by Directive 2003/98/EC

Table 1: Summary of content of the DRs categorised by quality criteria

The conclusion for the NBs based on the content of the DRs is to focus on:

- Timeliness (data): data shall be updated in a timely manner, by defining minimal update times (ALL DRs)
- Timeliness (metadata): metadata shall be updated in a timely manner, reporting periods shall be defined (ALL DRs)
- Completeness (data): percentage of categories of the data that shall be collected, percentage
 of data available in the system (ALL DRs)
- Validity "Structural quality (data)": setting up categories and standard to be used
- Coverage (data): all DRs require to provide the services at least on TEN-T network
- Accuracy (data): Difference between real data and reported data (SSTP)

Most of the quality subjects that were categorised into quality criteria call for a clarification and setting parameters to evaluate the degree of compliance with the quality criteria. There are some quality criteria mentioned in the DRs. However, most of the quality criteria are undefined and shall be specified later and reported by the MS, together with means used to monitor the criteria, with focus on the definition of the level of quality.

4.2 Quality and evaluation criteria applied by National Bodies

This section analyses the answers on the "NAPCORE Questionnaire for NBs" (February 2022) with regards to quality checking and Compliance Assessment. The results are documented already in Milestone Report M5.2. The following table provides a quantitative summary of the responses. Further on, in this section, consolidated responses by category are provided.

Commented [DM8]: Can we have the results as annex?



DR	Quantitative summary
RTTI	16 respondents provided an answer. None of the respondents have compliance
2015/962	checking forms. Only 3 countries have (according to the questionnaire) operational Compliance Assessments, others provided valuable comments. Two of those countries have supporting documents for the Compliance Assessment and one uses quality criteria ITS for equipment failure. The remaining three respondents provided comments on their quality criteria approach.
SRTI	15 respondents provided an answer. None of the respondents have compliance
2013/886	checking forms. Only 2 countries have (according to the questionnaire) operational Compliance Assessments, others provided valuable comments. Both countries have supporting documents for the Compliance Assessment, and one uses quality criteria ITS for equipment failure. The other three respondents provided feedback on their
	approach to quality criteria.
SSTP 2013/885	15 respondents provided an answer. None of the respondents have compliance checking forms. Only 2 countries have (according to the questionnaire) operational Compliance Assessments, others provided valuable comments. One of these countries has supporting documents for the compliance assessment and quality criteria from the LABEL project.
MMTIS 2017/1926	19 respondents provided an answer. None of the respondents have compliance checking forms. Only 3 countries have (according to questionnaire) operational Compliance Assessment, other provided valuable comments. Two of those countries have supporting documents for the Compliance Assessment. Two other countries mentioned having evaluation criteria but did not specify which ones or what thresholds are used.

Table 2: Quantitative summary of the responses in the questionnaire per DR

Relevant responses with regards to data quality:

- Selected results of the project InQMS focused on measuring quality were implemented for checking technical quality of the data (structure, availability, number of records, existence of specific parts of messages) (Czechia: SRTI, RTTI)
- There is a document on the NAP, describing the procedures for establishing quality in datasets (Denmark: SRTI, RTTI)
- There are implemented criteria for the recording of failure of the ITS-related equipment which have a direct impact on the quality of data and provision of services to the end-users (Lithuania: SRTI, RTTI)
- Expert decisions if the data is "good enough", this could be a challenge because the regulation could be clearer at many points (Norway: SRTI, RTTI)
- The quality criteria used are those that appear in the "LABEL Service Criteria" document until the new Delegated Regulation comes into force (Spain: SSTP)
- The producers define quality, often supported by the companies that supplied the data source itself (Luxembourg: MMTIS)
- Five levels of Compliance Assessment were identified: fully compliant, partly compliant, noncompliant, assessment impossible and not applicable (Poland: MMTIS)

Commented [LM9]: Gema Leiro García: It is proposed to adapt the order of the RDs, so that they follow the structure of the document and of the RDs themselves (MMTIS, RTTI, SRTI and SSTP).



4.2.1 Summary of requirements on quality parameters

With regards to quality criteria and Compliance Assessment only few (0-2) countries <u>use</u> some predefined quality criteria. There is not sufficient information provided on the quality criteria in order to be used for a general approach.

	SSTP	SRTI	RTTI	MMTIS
Quality	2/15	4/15	4/16	2/19
and	BE: metadata	BE: metadata	BE: metadata	BE: metadata
evaluatio	completeness,	completeness, yes/no	completeness, yes/no	completeness,
n criteria	yes/no form;	form;	form;	yes/no form;
	ES: LABEL quality	CZ: structural and	CZ: structural and	LU: producers
		technical quality	technical quality	define criteria
		measures, pilot;	measures, pilot;	themselves;
		DK: procedures for	DK: procedures for	PL: 5 levels of
		establishing quality in	establishing quality in	Quality
		datasets, document;	datasets, document;	
		LT: recovery within	LT: by technical	
		specified time,	specification,	
		monitoring	operation, accessibility,	
		operation,	failure of ITS	
		accessibility, failure	equipment;	
		of ITS equipment;	NO: ad-hoc, what is	
		NO: ad-hoc, what is	good enough	
		good enough		

Table 3: Summary of the content of the questionnaire per DR categorised by topics and countries (EU country code)

Even though there is a lack of information on the actual quality criteria itself, practical/actionable information on compliance procedures can be obtained. The results from the questionnaire indicated that countries tend to focus on parameters that can be measured and checked without additional ground truth data, rather than on data that counters statements provided via self-declaration, i.e.:

- Data description (metadata): being reported by one country (BE) and from project presentation also automatically assessed by others (NO),
- Operation, accessibility and delivery mechanisms: reported by two countries (CZ, LT),
- Structural compliance to data standard: reported by two countries (CZ, LT),
- Overall quality mark of the service: one country (PL).

The objective quality parameters (timelines, coverage, accuracy, ...) as defined by the project EU-EIP and its predecessors, were not reported to be used. They are, however, important for data producers. From the analysis of the DRs, data published on the NAP should be accompanied by a description of the overall level of quality, the criteria used to define this quality and the means used to monitor the quality.

Commented [LM10]: Gema Leiro García: It is proposed to adapt the order of the RDs, so that the follow the structure of the document and of the RDs themselves (MMTIS, RTTI, SRTI and SSTP).



4.3 Individual quality and evaluation requirements

An individual template with requirements was filled in just by one MS. Three additional requirements were identified:

- Check if the update (history) of the dataset/service corresponds with the update frequency stated in the metadata.
- Besides the quality check for the dataset/service itself, check if the dataset/service is nonredundant (i.e. registered multiple times or as a subset/superset) on the national NAP.
- Apply stratified sampling based on stakeholder type to select the datasets/services to include in the quality assessment.

4.4 Consolidation of the requirements

This section groups individual requirements (IND), requirements from the DRs and from the questionnaire (Q) by quality criteria and provides recommendations. To harmonise the Compliance Assessment across different providers of similar datasets, quality criteria that are specifically mentioned in the DRs or are current practice of NBs need to be further detailed. The following table is categorised per requirement type, respectively its relation to the metadata or data itself.

ID	Туре	Requirement	Source
Req-1	data	Timeliness, a minimal update time or some interval for the published shall data/service be defined (i.e., per data category, type).	
Req-2	meta- data	Timeliness, a minimal update time or some temporal interval (i.e., reporting period) for the reporting of the data change to the NAP shall be defined (i.e., per data category, type).	DR
Req-3	data	Completeness of the data set based on data categories defined by the DRs shall be defined.	DR
Req-4	data	Completeness of the data set based on the percentage of data available in the system, compared to normal operation, shall be defined per category.	DR
Req-5	data	Validity, a structural quality of the provided dataset, i.e., checking against schema shall be defined.	DR, Q
Req-6	data	Coverage quality (territory) as required (at least TEN-T) shall be defined.	DR
Req-7	data	Accuracy, a difference between real data and reported data shall be defined, at least. i.e., per data category, type.	DR
Req-8	general	Timely provision/renewal: which update interval can be considered as "regular" or "timely" shall be addressed in quality criteria.	DR
Req-9	data	The quality of data/service, i.e., levels shall be defined.	DR, Q
Req-10	data	Criteria used to define the level of quality and the means used to monitor the quality shall be defined.	DR
Req-11	general	Minimum criteria/minimum service shall be defined.	DR
Req-12	meta- data	Minimum information that data providers should include in their descriptions shall be specified to ascertain a "quality of the data update" (i.e., metadata completeness).	DR, Q
Req-13	data	Structural (formal) quality of the data shall be defined to detail meaning of "fully compatible and interoperable with DATEX".	DR



Req-14	data	Completeness of specific data with mandatory and voluntary data components shall be defined (i.e., safety and security of rest areas as defined by LABEL for SSTP).	-
Req-15	delivery	Technical, operational criteria for checking service/data availability shall be defined (i.e., operation, accessibility, delivery, equipment failure.	

Table 4: Requirements table

5 Review of the requirements by WG3

The requirements on the quality criteria were, together with the comprehensive presentation, handed over to WG3 for an assessment. The intention was that WG3 continued to define these quality criteria, formulating their content and context as well as the validation thresholds for the NBs to use. This is within the scope of Task 3.2 which has the objective to identify and enhance quality criteria and frameworks until the end of the NAPCORE project.

The document with the requirements was presented to WG3 for review. The comprehensive review, however, did not materialise since WG3 itself had difficulties to act upon the requirements due to the unfamiliar context and viewpoint of NBs as well as because the quality frameworks will be developed/enhanced in a later stage of NAPCORE. The challenge was discussed between WG3 and WG5 leaders and it was decided to take a different approach to the quality criteria definition in the form of several workshops with participants from both WGs. This approach and its outcome are further described in the next chapter.

6 Compliance Assessment forms Analysis

6.1 Analysis of the status quo

The analysis of the DRs in section 4.1 focused on quality and evaluation criteria in four specific EU Delegated Regulations. The DR (EU) 2017/1926 (MMTIS), DR (EU) 2015/962 (RTTI), DR (EU) No. 886/2013 (SRTI) and DR (EU) No. 885/2013 (SSTP) all mention explicit quality criteria or subjects related to quality in various sections of the regulation.

The MMTIS DR emphasises the importance of providers having information about the quality of the data they provide, including details on accuracy and timely provision. The RTTI DR also stresses the need for data quality information and timely updates, specifically for real-time traffic information services. The SRTI DR highlights minimum quality levels and criteria for safety-related traffic information, covering categories such as data availability, timeliness, accuracy, and geographic coverage. Lastly, the SSTP DR specifies quality requirements for safe and secure parking places, including descriptors, update intervals, accuracy, and completeness.

Although quality criteria were identified within the DRs, they were not explicitly defined. It is important to note that while many quality subjects were identified and categorised, further clarification and metrics are needed to evaluate compliance with the quality criteria and some of the quality criteria mentioned in the DRs remain undefined. The DRs refer to the need for future definition and monitoring of quality criteria, with a focus on defining the level of quality and means of evaluation. Table 1 provides a summary of the content of the DRs, categorising them based on quality criteria such as:

Commented [HP11]: If this is linked to a specific WG3 task or Milestone, it would be helpful to reference it here.



- Accuracy
- Completeness
- Validity
- Timeliness
- Coverage
- Accessibility

6.2 Identification of quality criteria within the working groups of NAPCORE

Based on the content of the DRs, the conclusion for the NBs is to prioritise certain aspects of quality. These include ensuring timely updates for both data and metadata, achieving completeness in data collection, establishing valid structural quality through standardisation, and addressing accuracy by minimising the difference between reported and real-world data; a full collection of the quality priorities can be found in cells marked in green in Annex A. Based on the analysis of the EU-EIP quality packages, the exchange with stakeholders (e.g., working group in Austria with stakeholders on quality criteria and methods), as well as the Vienna workshop in May 2022 including all NAPCORE WG5 partners, quality assurance methods are already used by the data providers, and their output is to be trusted. Reflecting again on the Compliance Assessment forms ultimately only a few gaps on the topic of quality were identified.

The few remaining gaps were closed as follows: Within the NAPCORE project, the working groups WG3 and WG5 conducted four virtual workshops (29/11/2022, 12/01/2023, 01/02/2023, and 14/02/2023). In each workshop, one DR was examined regarding the articles, which could be assigned to the quality criteria. The threshold value for quality criteria was differentiated here according to data type, which can be divided into dynamic as well as static data, and the event type, which can be differentiated into planned and unplanned events. These specific distinctions were added with conclusions of the EU-EIP quality methodology and references to the EU-EIP Quality Packages were provided. Once a consensus was reached within the two NAPCORE working groups, a proposed solution was presented and unanimously accepted, and then added to the Compliance Assessment forms (see cells marked in green in Annex A).

6.3 Outlook on upcoming processes

The Compliance Assessment forms have been reviewed for suitability in a practical context in a multi-country Pilot Trial in the first half of 2023. For this purpose, partner states have carried out a friendly³ Compliance Assessment for testing purposes. The following countries took part in the Pilot Trials: AT, BE, CZ, ES, FI, HR, NO, SE. The findings collected during the friendly Compliance Assessment will be processed in a structured manner, and the challenges will be documented on a country-specific basis. To ensure a harmonised evaluation, self-declaration forms, accompanying documents, and validation forms describing the results of the Compliance Assessment were made available in advance. Moreover, an evaluation form to assess the Compliance Assessment processes was created and filled-in by the participating NBs/CAs. The evaluation should also focus on the suitability and usefulness of the definitions made for the quality criteria. The analysis and review of the results was carried out in the summer of 2023. The Compliance Assessment forms will be adapted according to the findings. Once

³ without legal consequences in a collaborative manner, mainly to collect feedback



Commented [HP12]: Is this the complete list of priorities?



this process is completed, the possibilities for assessing quality and evaluation criteria will have been tested in practice and will form a cornerstone of a harmonised Compliance Assessment.

7 Conclusions

This document identifies quality criteria that shall be assessed by NBs in a Compliance Assessment of a particular dataset or service. The current practice has been reviewed and the DRs have been analysed as a basic resource, which the dataset will be validated against. To categorise and harmonise "quality" statements throughout the different sources, documents on the quality criteria concept based on ISO/TR 21707 were used and further refined by the projects Quantis and EU-EIP (timeliness, completeness, validity, coverage, accuracy and accessibility).

There are 15 quality criteria requirements that have been defined. These criteria are based on data, metadata, general information, and source. Each requirement includes an identified action that needs to be done.

To define quality criteria and their threshold, a table with a breakdown of the statements in the DRs was prepared by WG5 for Compliance Assessment (see Annexes). For each entry, it was decided whether a simple check box item or a quality parameter is suitable. The quality parameters have been further reviewed with respect to the content and an initial threshold was set up, usually with reference to the EU-EIP qualitative frameworks. Quality parameters are marked in green in the Annexes. The qualitative parameters definitions and thresholds are subject to update after the Pilot Trials are done in the first half of 2023. The Pilot Trials will be used to verify with the concerned data owners if the proposed criteria are realistic in practice. After a thorough analysis of the Pilot Trials, the forms for Compliance Assessment will be adapted accordingly.

In summation, it's evident that there remains a significant amount of work to do within the realm of quality parameters. At the same time, the impact of the work related to quality and evaluation criteria on the processes of Compliance Assessment is currently only visible to a limited extent. However, there is substantial backing for the ongoing advancement of quality-related efforts within the NAPCORE project, specifically within WG3.



8 Annexes

 Annex A: Requirements for the definition of quality and evaluation criteria for Compliance Assessment

Compliance Assessment Form for COMMISSION DELEGATED REGULATION (EU) 2017/1926

supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide multimodal travel information services

Key questions

Article

Theoretical assessment | Content assessment | Requirements

Open

Article 3 National access points						
1. Each Member State shall set up a national access point. The national access point shall constitute a single point of access for users to at least the static travel and traffic data and historic traffic data of different transport modes, including data updates, as set out in the Annex, provided by the transport authorities, transport operators, infrastructure managers or transport on demand service providers within the territory of a given Member State. 2. Existing national access points that have been set up to comply with other delegated acts adopted under Directive 2010/40/EU may be used as national access points, if deemed appropriate by the Member States. 3. National access points shall provide discovery services to users, for example services allowing for the search of the requested data using the contents of the corresponding metadata and displaying such contents;						
4. Transport authorities, transport operators, infrastructure managers or transport on demand service providers shall ensure that they provide the metadata in order to allow users to discover and use the datasets made accessible through the national access points.	Is appropriate metadata provided in order to allow users to discover and use datasets through the national access points?	o discover only on their metadata.			Appropriate metadata = harmonised metadata catalogue from NAPCORE	
5. Two or more Member States may set up a common acc	ess point.					
Article 4 Accessibility, exchange and reuse of station	travel and traffic data					
Transport authorities, transport operators, infrastructure Annex, of the different transport modes by using:	e managers or transport on demand se	ervice providers shall provide t	he static travel and traffic da	ata and historic traffic data lis	ted in point I of the	
(a) for the road transport, the standards defined in Article 4 of Delegated Regulation (EU) 2015/962;	Referring	to Compliance Assessment fo	rm for 2015/962, Article 4.			
(b) for other transport modes, the use of one of the following standards and technical specifications: NeTEx CEN/TS 16614 and subsequent versions, technical documents defined in Regulation (EU) No 454/2011 and subsequent versions, technical documents elaborated by IATA or any machine-readable format fully compatible and interoperable with those standards and technical specifications;	Do transport authorities, transport operators, infrastructure managers or transport on demand service providers provide data in NeTEx CEN/TS 16614 and subsequent versions or in any fully compatible machine-readable format?	Check on NAP what standard is specified for the data set.	Obtain data set and check for one of the standards listed in Article 4 (1) b.	Entry on NAP Metadata Obtaining data set		
(c) for the spatial network the requirements defined in Article 7 of Directive 2007/2/EC.	Do transport authorities, transport operators, infrastructure managers or transport on demand service providers provide data for the spatial network according to the requirements defined in Article 7 of Directive 2007/2/EC? Do service providers of spatial network data provide data in INSPIRE and updated versions?	Check on NAP what standard is specified for the data set.	Obtain data set and check for requirements defined in Article 7 of Directive 2007/2/EC.	Entry on NAP Metadata Obtaining data set		

Commented [DM13]: I would appreciate a rework of the tables. It is confussing to see articles that cross the table horizontally, others in 2 rows, etc.





I of the Annex that are applicable to NeTEx and DATEX II shall be represented through minimum national profiles.	Are relevant static travel and traffic data listed in point 1 of the Annex that are applicable to NeTEx and DATEX II represented through minimum national profiles (if available)?	Check in metadata on NAP, if a national minimum profile is used.	Obtain data set and check if the dataset is compliant with the minimum profile.	 Entry on NAP Metadata Existence of a national minimum profile Obtaining a dataset 	Are national minimum profiles available?
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- 3. Transport authorities, transport operators, infrastructure managers or transport on demand service providers shall provide the static travel and traffic data through the national access point in the required formats in line with the following timetable:
- (a) for the travel and traffic data set out in point 1.1 of the Annex for the comprehensive TEN-T network, by 1 December 2019 at the latest;
- (b) for the travel and traffic data set out in point 1.2 of the Annex for the comprehensive TEN-T network, by I December 2020 at the latest;
- (c) for the travel and traffic data set out in point 1.3 of the Annex for the comprehensive TEN-T network, by 1 December 2021 the latest;
- (d) for the travel and traffic data set out in points 1.1, 1.2 and 1.3 of the Annex for the other parts of the Union transport network, by 1 December 2023 at the latest.
- 4. APIs that provide access to static travel and traffic data listed in the Annex via the national access point shall be publicly accessible allowing users and end-users to register to obtain access.

Article 5 Accessibility, exchange and reuse of dynamic travel and traffic data

I. Where the Member States decide to provide the dynamic travel and traffic data of different transport modes listed in point 2 of the Annex through the national access point, transport authorities, transport operators, infrastructure managers or transport on demand service providers shall use:

(a) for the road transport the standards defined in Articles 5 and 6 of Delegated Regulation (EU) 2015/962;	Referrin				
(b) for the other transport modes: SIRI CEN/TS 15531 and subsequent versions, technical documents defined in Regulation (EU) No 454/2011 or any machine-readable format fully compatible and interoperable with those standards or technical documents.	Is the data made available in SIRI CEN/TS15531 format or in a fully compatible, interoperable, machine-readable format? Are the criteria for interoperability according to Regulation (EU) No 454/2011 met?	Check on NAP what standard is specified for the data set.	Obtain data set and check whether the standard corresponds to SIRI CEN/TS15531 or a fully compatible one.	Entry on NAPMetadataObtain data set	
2. The relevant travel and traffic data referred to in point 2 of the Annex applicable to SIRI and DATEX II shall be represented through minimum national profiles determined by Member States accessible through the national access point.	Are relevant travel and traffic data listed in point 2 of the Annex that are applicable to SIRI and DATEX II represented through minimum national profiles (if available)?	Check in metadata on NAP, if a national minimum profile is used.	Obtain data set and check if the dataset is compliant with the minimum profile.	 Entry on NAP Metadata Existence of a national minimum profile Obtaining a dataset 	There are Datex Il profiles but they are not declared as minimum profiles.

3. APIs that provide access to dynamic travel and traffic data listed in the Annex via the national access point shall be publicly accessible allowing users and end-users to register to obtain access.

Article 6 Data Updates

I. Travel information services shall be based on updates of static and dynamic travel and traffic data.



2. When changes occur, the relevant static and dynamic travel and traffic data listed in the Annex shall be updated by transport authorities, transport operators, infrastructure managers or transport on demand service providers through the national access point in a timely manner. They shall in a timely manner correct any inaccuracies detected by them in their data or signalled to them by any user or end user.

When changes occur, do transport authorities, transport operators, infrastructure managers or demand responsive transport providers update the relevant static and dynamic travel and traffic data referred to in the Annex via the national access point in a timely manner?

Do they also correct in a timely manner any data inaccuracies they identify or that are reported to

them by users or end-users?

Check in accompanying documents if an update rate is indicated for the dataset and how the period is defined.

Check data set in selected time window if the period for updates and corrections of inaccuracies is actually adhered to.
Survey of organisation on quality assurance processes.

- Accompanying documents
- Survey of the organisation
- Obtaining a dataset

For planned updates: Timely = at the latest, the day of effect of change; For unplanned updates: Timely = immediately Timeliness (update) Reference "Multimodal Travel Information Services (MMTIS) - Quality Package" (EU-EIP, 2019). See Table 5)

Article 7 Linking travel information services

- 1. Upon request, travel information service providers shall provide to another information service provider routing results based on static, and where possible, dynamic information.
- 2. Routing results shall be based on:

(a) the enquirers start and end points of a journey along with the specific time and date of departure or arrival, or both;	Do routing results include the criteria set out in Article 7 (2) a?	Check in accompanying documents if the service description includes the criteria set out in Article 7 (2) a.	Obtain service and check if the routing result includes the criteria set out in Article 7 (2) a.	Accompanying documents / Service description Obtaining service	
(b) possible travel options along with the specific time and date of departure or arrival, or both, including any possible connections;	Do routing results include the criteria set out in Article 7 (2) b?	Check in accompanying documents if the service description includes the criteria set out in Article 7 (2) b.	Obtain service and check if the routing result includes the criteria set out in Article 7 (2) b.	Accompanying documents / Service description Obtaining service	
(c) the handover point between travel information services;	Do routing results include the criteria set out in Article 7 (2) c?	Check in accompanying documents if the service description includes the criteria set out in Article 7 (2) c.	Obtain service and check if the routing result includes the criteria set out in Article 7 (2) c.	Accompanying documents / Service description Obtaining service	





(d) in case of disturbances, alternative possible travel options along with the specific time and date of departure or arrival, or both, and any connections, where available.	Do routing results include the criteria set out in Article 7 (2) d?	Check in accompanying documents if the service description includes the	Obtain service and check if the routing result includes the	Accompanying documents / Service description	
or arrival, or oder, and any connections, where available.		criteria set out in Article 7 (2) d.	criteria set out in Article 7 (2) d.	Obtaining service	
Article 8 Requirements for service provisions reus	e of travel and traffic data and link	ing of travel information se	ervices		
I. The travel and traffic data listed in the Annex and the corresponding metadata including information on the quality thereof shall be accessible for exchange and reuse within the Union on a non-discriminatory basis, through the national or common access point and within a time-frame that ensures the timely provision of travel information services. They shall be accurate and up to date.	Are the travel and traffic data referred to in the Annex, as well as the corresponding metadata and information on the quality of those data, made available for exchange and re-use within the Union in a non-discriminatory manner through the national or common access point? Are they made available within a timeframe that ensures the timely provision of the travel information services? Is the data accurate and up to date?	Check in accompanying documents how the terms and conditions of data exchange and reuse are defined and how the period for provision and update of travel information services (Data update rate) is defined.	Survey of organisation related to conditions for data exchange and reuse. Obtain a data set and check if it is accessible for exchange and reuse within a time-frame that ensures the timely provision of travel information services.	Accompanying documents/ Terms of data exchange/reuse Entry on NAP Obtaining data set Survey of the organisation	Non-discriminatory = same conditions for all Compliance Assessment for Updates already described in Article 6
2. The data referred to in paragraph I shall be reused in a neutral manner and without discrimination or bias. Criteria used for ranking travel options of different transport modes or combinations thereof, or both, shall be transparent and not be based on any factor directly or indirectly relating to the user identity or, if any, the commercial consideration related to the reuse of the data and shall be applied on a non-discriminatory basis to all participating users. The first principle travel itinerary presentation shall not mislead the end-user.	Are the criteria used to rank travel options using different modes of transport or combinations thereof transparent? Are they not based on factors directly or indirectly related to the identity of the user or any commercial interests in the re-use of the data? Are the data GDPR conform? Is the presentation of the itinerary misleading for the end user?	Review in accompanying documents criteria to rank travel options related to transparency and non-discrimination. Review in accompanying documents GDPR conform implementation of service. Review in accompanying documents principles of presentation of travel itinerary.	Obtain service and analyse provision in relation to service description, criteria, and principles for service presentation.	 Accompanying documents Obtaining service 	Non- discriminatory = same conditions for all
3. Where reusing the static and dynamic travel or traffic data, the source of those data shall be indicated. The date and time of the last update of the static data shall also be indicated.	Is the source indicated if static and dynamic travel or traffic data are used? Is the date and time of the last update of the static data provided?	Check service description in accompanying documents related to the indication of data source and data updates (date and time).	Obtain service and analyse it related to the indication of data source and data updates (date and time).	Obtaining service Accompanying documents/Service description	



4. The terms and conditions for the use of the traffic and travel data provided through the national access point may be determined through a licence agreement. Those conditions shall not unnecessarily restrict possibilities for reuse or be used to restrict competition. Licence agreements, whenever used, shall in any event impose as few restrictions on reuse as possible. Any financial compensation shall be reasonable and proportionate to the legitimate costs incurred of providing and disseminating the relevant travel and traffic data.	the national access point regulated in a licence agreement? Are conditions restricting the possibilities for further use? Does this impede competition? Is the financial remuneration	Check in accompanying documents terms and conditions of use.	No content related assessment possible – assessment only on occasion.	•
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5. Terms and conditions of linking travel information services shall be defined in contractual agreements between the travel information service providers. Any financial compensation of the expenses of linking travel information services incurred shall be reasonable and proportionate.

Do contractual agreements define terms and conditions? Is the financial compensation for the costs of linking travel information services reasonable and proportionate?

Check in accompanying documents terms and conditions.

No content related assessment possible – only on occasion.

 Accompanying documents/ Terms and conditions for contractual agreements

Accompanying documents / terms and conditions of use

> Definition for "reasonable and proportionate costs" missing.

Article 9 Assessment of compliance

- 1. Member States shall assess whether the requirements set out in Articles 3 to 8 are complied with by the transport authorities, transport operators, transport on demand service providers and travel information service providers.
- 2. In order to conduct the assessment, the competent authorities of Member States may request from the transport authorities, transport operators, infrastructure managers, transport on demand service providers or travel information service providers, the following documents:
- (a) a description of the travel and traffic data listed or stored in the access point(s) and the travel information services available including connections with other services if applicable, as well as the information on the quality thereof; and
- (b) an evidence-based declaration of compliance with the requirements set out in Articles 3 to 8.

Were the listed documents
requested?

Did the transport authorities, transport operators, infrastructure managers, transport on demand service providers or travel information service providers provide the documents?

Compliance Assessment must be carried out. Check in Compliance Assessment the accompanying documents.

- Entry on NAPSelf-Declaration
 - Accompanying documents

3. Member States shall randomly check the correctness of the declarations referred to in paragraph 2(b).



Compliance Assessment Form for COMMISSION DELEGATED REGULATION (EU) 2015/962

supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide real-time traffic information services

Theoretical assessment | Content assessment | Requirements

Key questions

Air creie		Theoretical assessment	Content assessment		
Article 3 National access points					
Each Member State shall set up a national access point road authorities, road operators and service providers a 2. Existing national access points that have been set up to Member States, as national access points. National access points shall provide appropriate disco	nd concerning the territory of a given Moo comply with the requirements arising f	ember State.			
4. Road authorities and road operators, in cooperation with digital map producers and service providers, shall ensure that they provide the appropriate metadata in order to allow users to discover and use the datasets to which access is provided through the national access points.	Is appropriate metadata provided in order to allow users to discover and use datasets through the national access points?	Check on NAP if datasets can be found and used based only on their metadata.		Entry on NAP Metadata	Appropriate metadata = harmonised metadata catalogue from NAPCORE
5. Two or more Member States may set up a common a	ccess point.				
Article 4 Accessibility, exchange and re-use of sta	tic road data				
I. For the purpose of facilitating the provision of compatible, interoperable, and continuous real-time traffic information services across the Union, road authorities and road operators shall provide the static road data they collect and update pursuant to Article 8 in a standardised format, if available, or in any other machine readable format.	Do road authorities and road operators provide static road data and update pursuant to Article 8 in a standardised format, if available or in any other machine-readable format for the purpose of facilitating the provision of compatible, interoperable, and continuous realtime traffic information services across the Union?	Check on NAP if a standardised format/machine-readable format is specified for the data set.	Obtain a dataset and check for standardised format/machine- readable format.	 Entry on NAP Metadata Obtaining a dataset 	Not DATEXII (
2. The data referred to in paragraph I and the corresponding rowider within the Union:	nding metadata including information on	the quality thereof shall be acc	essible for exchange and re-	use by any digital map produ	icer or service
(a) on a non-discriminatory basis;	Are the data referred to in paragraph I, as well as the corresponding metadata and information on the quality of those data, made available for exchange	Check how the terms and condition of data exchange and reuse are defined Check on access point, how access to data is regulated.	Check if data set can be requested/ accessed without discrimination.	Accompanying documents/ License terms Entry on NAP Obtaining a data set	"non- discriminatory" = same conditions for all





		I				
	and re-use within the Union in a non-discriminatory manner?			 Survey of the organisation 		
(b) within a time-frame that ensures the timely provision of the real-time traffic information service;	Does the time-frame ensure a timely provision of the real-time traffic information service?	Check accompanying documents on how the time-frame for timely provision of the real-time traffic information service is defined.	Obtain data set and check if the time-frame of provision is actually adhered to. Survey of organisation on quality assurance processes.	 Accompanying documents Obtaining a dataset Survey of the organisation 	Timely = ten working days	
(c) through the national or common access point referred to in Article 3;	Is data referred to in paragraph I and the corresponding metadata accessible through a national/common access point?	Check if the data is available on the NAP.	Check if the data is actually accessible.	Entry on NAPObtaining data		
(d) Road authorities, road operators, digital map producers and service providers using the static road data referred to in paragraph I shall collaborate in order to ensure that any inaccuracies related to static road data are signalled without delay to the road authorities and road operators from which the data originates.	Do Road authorities, road operators, digital map producers and service providers using the static road data referred to in paragraph I collaborate in order to ensure that any inaccuracies related to static road data are signalled without delay to the road authorities and road operators? Are communication channels/information loops planned?	Survey of the organisation. Review procedure/ process to determine whether appropriate communication channels are provided.		 Survey of the organisation Accompanying documents/ Process description Obtaining a dataset 		
3. When service providers use static road data referred to in paragraph I provided by road authorities and road operators, they shall take into account, as far as possible, any traffic circulation plans developed by the competent authorities.	Do service providers take into account when using static road data referred to in paragraph I provided by road authorities and road operators any traffic circulation plans developed by the competent authorities? Which traffic circulation plans are available?	Survey to check if traffic circulation plans developed by the competent authorities are known and taken into account.	Check by using metadata/accompanying documents whether traffic circulation plans have been implemented in static road data.	Survey of the organisation Metadata Accompanying documents	Identification of the interface between the databases must be possible	
Article 5 Accessibility, exchange and re-use of dynamic road status data						
I. For the purpose of facilitating the provision of compatible, interoperable, and continuous real-time traffic information services across the Union, road authorities and road operators shall provide the dynamic road status data they collect and update pursuant to Article 9 in DATEX II (CEN/TS 16157 and	Has data been made available in DATEX II (CEN/TS 16157) or another fully compatible and DATEX II interoperable machine-readable format?	Check if DATEX II (CEN/TS 16157) format or another DATEX II compatible and interoperable machine-	Obtain a dataset and check for DATEX II format or machine-readable DATEX II compatible and interoperable format.	Entry on NAPMeta dataObtaining a data set	A Datex II conversion key must be supplied for the format and version to be	





subsequently upgraded versions) format or any machine-readable format fully compatible and interoperable with DATEX II		readable format is specified for the dataset on the NAP.			interoperable and compatible.
2. The data referred to in paragraph I and the correspo	nding metadata including information on	the quality thereof shall be acco	essible for exchange and re-	use by any service provider	within the Union:
(a) on a non-discriminatory basis;	Are the data referred to in paragraph I, as well as the corresponding metadata and information on the quality of those data, made available for exchange and re-use within the Union on a non-discriminatory basis?	Check how the terms and condition of data exchange and reuse are defined. Check on access point, how access to data is regulated.	Check if data set can be requested/accessed without discrimination.	Accompanying documents/ License terms Entry on NAP Obtaining a data set Survey of the organisation	"non- discriminatory" = same conditions for all
(b) within a time-frame that ensures the timely provision of the real-time traffic information service;	Does the time-frame ensure a timely provision of the real-time traffic information service?	Check accompanying documents on how the time-frame for timely provision of the real-time traffic information service is defined.	Obtain data set and check if the time-frame of provision is actually adhered to. Survey of organisation on quality assurance processes.	Accompanying documents Obtaining a dataset Survey of the organisation	timely = 10 working days
(c) through the national or common access point referred to in Article 3	Is data referred to in paragraph I and the corresponding metadata accessible through a national/common access point?	Check if the data is available on the NAP.	Check if the data is actually accessible.	Entry on NAPObtaining data	
3. When service providers use dynamic road status data referred to in paragraph I provided by road authorities and road operators, they shall take into account, as far as possible, any temporary traffic management measures taken by the competent authorities.	Do service providers take into account when using dynamic road status data referred to in paragraph I provided by road authorities and road operators any temporary traffic management measures taken by the competent authorities?	Survey to check if temporary traffic management measures are known and taken into account.	Check if temporary traffic management measures are actually taken into account.	 Survey of the organisation Procedure/-process analysis Obtaining a dataset 	
Article 6 Accessibility, exchange and re-use of tra	affic data				
I. For the purpose of facilitating the provision of compatible, interoperable, and continuous real-time traffic information services across the Union, road authorities and road operators shall provide the traffic data they collect and update pursuant to Article 10 in DATEX II (CEN/TS 16157 and subsequently upgraded versions) format or any machine-readable format fully compatible and interoperable with DATEX II.	Has data been made available in DATEX II (CEN/TS 16157) or another fully compatible and DATEX II interoperable machine-readable format?	Check if DATEX II (CEN/TS 16157) format or another DATEX II compatible and interoperable machinereadable format is specified for the dataset on the NAP.	Obtain a dataset and check for DATEX II format or machine-readable DATEX II compatible and interoperable format.	Entry on NAPMeta dataObtaining a data set	A Datex II conversion key must be supplied for the format and version to be interoperable and compatible.





2. The data referred to in paragraph I and the correspo	nding metadata including information on	the quality thereof shall be acc	essible for exchange and re-	use by any service provider v	within the Union:		
(a) on a non-discriminatory basis;	Are the data referred to in paragraph I, as well as the corresponding metadata and information on the quality of those data, made available for exchange and re-use within the Union on a non-discriminatory basis?	Check how the terms and condition of data exchange and reuse are defined. Check on access point, how access to data is regulated.	Check if data set can be requested/ accessed without discrimination.	Accompanying documents/ License terms Entry on NAP Obtaining a data set Survey of the organisation	"non- discriminatory" = same conditions for all		
(b) within a time-frame that ensures the timely provision of the real-time traffic information service;	Does the time-frame ensure a timely provision of the real-time traffic information service?	Check accompanying documents on how the time-frame for timely provision of the real-time traffic information service is defined.	Obtain data set and check if the time-frame of provision is actually adhered to. Survey of organisation on quality assurance processes.	 Accompanying documents Obtaining a dataset Survey of the organisation 	Timely = ten working days		
c) through the national or common access point referred to in Article 3.	Is data referred to in paragraph I and the corresponding metadata accessible through a national/common access point?	Check if the data is available on the NAP.	Check if the data is actually accessible.	Entry on NAPObtaining data			
3. For the purpose of optimising traffic management, road authorities and road operators may request service providers to provide the traffic data they collect and update pursuant to Article 10. Such data shall be provided in DATEX II (CEN/TS 16157 and subsequently upgraded versions) format or any machine-readable format fully compatible and interoperable with DATEX II, through the access point referred to in Article 3 and accompanied by the corresponding metadata including information on the quality thereof.	Assessment only if road authorities/road operators request service providers to provide the traffic data they collect and update pursuant to Article 10 Is data provided in DATEX II (CEN/TS 16157 and subsequently upgraded versions) format or any machine-readable format fully compatible and interoperable with DATEX II, through the access point referred to in Article 3 and accompanied by the corresponding metadata including information on the quality thereof?	Check if DATEX II (CEN/TS 16157) or fully compatible format was specified for the dataset on the NAP.	Obtain a dataset and check for DATEX II format or machine-readable DATEX II compatible and interoperable format.	 Entry on NAP Meta data Obtaining a data set 	A Datex II conversion key must be supplied for the format and version to be interoperable and compatible This is only permitted in exceptional cases ("may request").		
Article 7 Data updates							
Real-time traffic information services shall be based on updates of static road data, dynamic road status data and traffic data, or any combination thereof.	Are real-time traffic information services based on updates of static road data, dynamic road status data and traffic data?	Check in accompanying documents if an update rate is indicated for the data and how the time frame is	Obtain data set/service and review a selected time window to check	Accompanying documentsSurvey of the organisation			





	Are the services based on a combination thereof?	defined for providing updates.	the adjustments to the respective event. Survey to analyse quality assurance processes.	Obtaining data set/ service	
All data shall be regularly updated by the road authorities, road operators, service providers in accordance with the requirements set out in Articles 8 to 10.	Is data regularly updated by the road authorities, road operators, service providers in accordance with the requirements set out in Articles 8 to 10?	Survey of the organisation to check if an update is planned.	Obtain data and check if data is regularly updated.	Survey of the organisation Obtaining dataset	Regularly = referring to the detailed description in Articles 8 - 10
Road authorities, road operators, service providers shall in a timely manner correct any inaccuracies detected by them in their data or signalled to them by any user and end-users.	Do Road authorities, road operators, service providers correct in a timely manner any inaccuracies detected by them in their data or signalled to them by any user and end-users? Does a correction of data inaccuracies take place?	Check accompanying documents on how the time-frame for correction of data inaccuracies is defined.	Obtain data and check if the time-frame for correction of data inaccuracies is actually adhered to. Survey of organisation on quality assurance processes.	Accompanying documents Survey of the organisation Process/ procedure analysis Obtaining dataset	timely manner = best effort
Article 8 Updating static road data					
I. The updates of the static road data shall concern as a minimum the following parameters: (a) the type of static road data as set out in point I of the Annex concerned by the update; (b) the location of the condition concerned by the update; (c) the type of update (modification, insertion or deletion); (d) the description of the update; (e) the date on which the data has been updated; (f) the date and time when the change in a given condition has occurred or is planned to occur; (g) the quality of the data update. The location of the condition concerned by the update shall be determined using a standardised or any other generally accepted dynamic location referencing method that enables unambiguous decoding and interpretation of this location.	Are all mentioned parameters of Article 8 (I) included in the updates? How is the location determined?	Check on NAP if all parameters are included in the metadata. Check in accompanying documents if the location is determined via a standardised/ generally accepted method and complies with the requirements.	Obtain dataset and check if all parameters are actually present in the update.	 Entry on NAP Metadata Accompanying documents Obtaining a dataset 	
2. Road authorities and road operators shall ensure the timely update of static road data and, where	Do road authorities and road operators ensure the timely update of static road data and, where known	Check accompanying documents if an update is planned and how the	Obtain data and check if the time-frame for	Accompanying documents	Timely = at the latest, the day of effect of change;





known and possible, provide these updates to users in advance.	and possible, provide these updates to users in advance?	update time frame is defined.	data updates is actually adhered to. Survey of organisation on quality assurance processes.	Survey of the organisationObtaining a dataset	in advance = planned projects
3. When digital map producers and service providers use static road data updates, they shall ensure that these updates are processed in a timely manner in order to make the information accessible to end-users without delay.	Do digital map producers and service providers process static road data in such a way that the information can be made available to end users without delay? What ensures that the updates are processed in a timely manner?	Check in accompanying documents if a process is defined and if an update rate is indicated for the dataset and how the time frame is defined for processing updates.	Obtain data and review a selected time window to check the adjustments to the respective event. Survey of the organisation to analyse quality assurance processes.	 Accompanying documents Survey of the organisation Obtaining the data updates 	timely manner/without delay = best effort
Article 9 Updating dynamic road status data					
I. The updates of the dynamic road status data shall concern as a minimum the following parameters: (a) the type of dynamic road status data as set out in point 2 of the Annex concerned by the update and, where appropriate, a short description of it; (b) the location of the event or condition concerned by the update; (c) the period of occurrence of the event or condition concerned by the update; (d) the quality of the data update. The location of the event or condition concerned by the update shall be determined using a standardised or any other generally accepted dynamic location referencing method that enables unambiguous decoding and interpretation of this location.	Are all mentioned parameters of Article 9 (I) included in the updates? How is the location determined?	Check if all parameters are included in the metadata. Check in accompanying documents if the location is determined via a standardised/ generally accepted method and complies with the requirements.	Obtain dataset and check if all parameters are actually present in the update.	 Entry on NAP Metadata Accompanying documents Obtaining a dataset 	
2. Road authorities and road operators shall ensure the timely update of dynamic road status data and, where known and possible, provide these updates in advance	Do road authorities and operators ensure the timely updating of dynamic road condition data and provide these updates in advance, where known and possible?	Check accompanying documents if an update is planned and how the update time frame is defined.	Obtain data and check if the time-frame for data updates is actually adhered to. Survey of organisation on quality assurance processes.	 Accompanying documents Survey of the organisation Obtaining a dataset 	For planned updates: Timely = at the latest, the day of effect of change; For unplanned updates: Timely = immediately Timeliness (update)





					(Reference "Quality of Safety-Related and Real-Time Services Traffic Information - Quality package" (EU-EIP, 2019). See Tables 3 and 4)
3. The real-time traffic information shall be modified accordingly or withdrawn as soon as possible after the status of the dynamic road status data concerned has changed.	Is real-time traffic information changed or withdrawn as soon as possible after the status of the relevant dynamic road status data has changed?	Check accompanying documents if a process for modifying or withdrawing real-time traffic information is implemented.	Obtain data and check in a selected time window if real-time traffic information was modified or withdrawn. Survey of organisation to analyse quality assurance processes.	Accompanying documents Survey of the organisation Obtaining a dataset	For planned updates: Timely = at the latest, the day of effect of change; For unplanned updates: Timely = immediately = Latency (Reference "Quality of Safety-Related and Real-Time Services Traffic Information - Quality package" (EU-EIP, 2019). See Tables 3 and 4)
Article 10 Updating traffic data					
I. The updates of the traffic data shall include as a minimum the following parameters: (a) the type of traffic data as set out in point 3 of the Annex concerned by the update and, where appropriate, a short description of it; (b) the location of the event or condition concerned by the update; (c) the quality of the data update. The location of the event or condition concerned by the update shall be determined using a standardised or	Are all mentioned parameters mentioned in Article 10 (1) included in the update? How is the location determined?	Check if all parameters are included in the metadata. Check in accompanying documents if the location is determined via a standardised/ generally accepted method and complies with the requirements.	Obtain dataset and check if all parameters are actually present in the update.	 Entry on NAP Metadata Accompanying documents Obtaining a dataset 	





any other generally accepted dynamic location referencing method that enables unambiguous decoding and interpretation of this location.					
The real-time traffic information shall be modified accordingly or withdrawn by road operators and service providers as soon as possible after the status of traffic data concerned has changed.	Is real-time traffic information changed or withdrawn accordingly as soon as possible after the status of the traffic data concerned has changed?	Check accompanying documents if a process for modifying or withdrawing real-time traffic information is implemented.	Obtain data and check in a selected time window if real-time traffic information was modified or withdrawn. Analyse quality assurance processes.	Accompanying documents Survey of the organisation Obtaining a dataset	As soon as possible = Latency & Timeliness (update) (Reference "Quality of Safety-Related and Real-Time Services Traffic Information - Quality package" (EU-EIP, 2019). See Tables 3 and 4)
3. When service providers use traffic data updates, they shall ensure that these are processed in a timely manner in order to make the information accessible to end-users without delay.	Do service providers process updated traffic data in a timely manner so that the information is made available to end-users without delay? What ensures that the updates are processed in a timely manner?	Check in accompanying documents if an update rate is indicated for the dataset and how the time frame is defined for processing updates.	Obtain data and review a selected time window to check the adjustments to the respective event. Survey of the organisation to analyse quality assurance processes.	Accompanying documents Survey of the organisation Obtaining the data updates	timely and without delay = Latency & (Reference "Quality of Safety-Related and Real-Time Services Traffic Information - Quality package" (EU-EIP, 2019). See Tables 3 and 4)
Article II Compliance assessment					
I. Member States shall assess whether the requirements with paragraphs 2 to 3.	set out in Articles 3 to 10 are complied	with by the road authorities, ro	oad operators, digital map p	roducers and service provide	ers in accordance
2. In order to proceed to the assessment, the competent authorities of Member States may request from the road authorities, road operators, digital map	Were the listed documents requested? Did the road authority, road operator, digital map producer or	Compliance Assessment must be carried out	Check in Compliance Assessment the accompanying documents	Entry on NAP Self-Declaration Accompanying documents	



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producers and service providers the following documents:	service provider provide the documents?		
(a) a description of the road and traffic data, digital			
map or real-time traffic information services they			
provide as well as the information on the quality			
thereof and the conditions of re-use of these data;			
(b) an evidence-based declaration of compliance with			
the requirements set out in Articles 3 to 10.			



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supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to data and procedures for the provision, where possible, of road safety-related minimum universal traffic information free of charge to users

Request of the service or check of the service on a busy day of traffic, on which an increased volume of reports is to be expected! (Rain/start of school/start of holidays/before long weekends)

Article	Key questions	Theoretical assessment	Content assessment	Requirements	Open
Article 3 List of road-safety related events or condit	ions				
The events or conditions covered by the road safety-related minimum universal traffic information service shall consist of at least one of the following categories: (a) temporary slippery road; (b) animal, people, obstacles, debris on the road; (c) unprotected accident area; (d) short-term road works; (e) reduced visibility; (f) wrong-way driver; (g) unmanaged blockage of a road; (h) exceptional weather conditions.	Is a service in place to provide road safety-related minimum universal traffic information? Does the road safety-related minimum universal traffic information service cover at least one of the listed categories?	Check whether at least one category has been ticked in the self-declaration.	Check the data/service (app, web service, broadcast message or similar) if the ticked categories are covered.	Self-declaration Obtaining service/data set	
Article 4 Information content					
I. The information provided on the road safety-related events or conditions shall include the following items: (a) location of the event or the condition; (b) the category of event or condition as referred to in Article 3 and, where appropriate, short description of it; (c) driving behaviour advice, where appropriate.	Does the information include the location of the event/the condition? Does the information include the category of the event/the condition referred to in Article 3? Does the information include a short description, where appropriate? Does the information include driving behaviour advice, where appropriate?	Check in accompanying documents if the listed categories are described.	Check in dataset and/or service if the location, the category and optionally a description and driving behaviour advice are included.	Accompanying documents Entry on NAP Obtaining a data set/service	
2. The information shall be withdrawn if the event or condition cease to subsist, or shall be modified if there is a change in the event or condition.	Is the information withdrawn after the end of the event/the condition? Is the information modified when the event/the condition changes?	Check service description in accompanying documents for information related to termination/changes of events/conditions.	Check if there is a process defined regarding termination/change of an event or condition and if	Accompanying documents Survey of the organisation	Criteria: Correctness; timeliness (update)



			the process is mirrored in the service/data set.	Obtaining the service/data set					
Article 5 Provision of the information service									
1. Member States shall designate sections of the trans-European road network where traffic and safety conditions require the deployment of the road safety-related minimum universal traffic information service. They shall communicate these sections of roads to the Commission. 2. The provision of the information service shall fulfil the requirements set out in Articles 6 to 8.									
Article 6 Detection of events or conditions and collections	ction of data								
For the sole purposes of providing the information service, public and private road operators and/or service providers shall set up or use the means to detect events or identify conditions, and shall collect the relevant road safety-related traffic data. The deployment of these means shall comply with the conditions and requirements set out in national law.	Are arrangements made to identify events or conditions by public and private road operators and/or service providers? Are appropriate means being used? Are relevant road safety-related traffic data being collected? For what purpose is the traffic data collected? Does the implementation of these arrangements comply with the conditions and requirements set out in national law?	Check accompanying documents if compliance with the obligations of Article 6 are met.	Survey of organisation on compliance with the obligations of Article 6.	 Accompanying documents Survey of the organisation 	How is it possible to guarantee that collected data will not be used arbitrarily/for other purposes?				
	bodies! Article 11: Rules on liability	Article 10: Rules on privacy, security and re-use of information - Processing of personal data; PSI Directive (see Article 7, (3)c) for public bodies!							
Article 7 Availability, exchange and reuse of data									
I. Public and/or private road operators and/or service providers shall share and exchange the data they collect pursuant to Article 6. For that purpose, they shall make these data available in the DATEX II (CEN/TS 16157) format or any fully compatible and interoperable with DATEX II machine-readable format through an access point.	Has data been made available in DATEX II (CEN/TS 16157) or another fully compatible and DATEX II interoperable machine-readable format? Is data corresponding to the criteria available on an access point?	Check if DATEX II (CEN/TS 16157) format or another DATEX II compatible and interoperable machine- readable format is specified for the dataset on the NAP.	Obtain a dataset and check for DATEX II format or machine-readable DATEX II compatible and interoperable format.	Entry on NAPMeta dataObtaining a data set	A Datex II conversion key must be supplied for the format and version to be interoperable and compatible;				
2. Member States shall manage a national access point to the operating on their territory.	e data referred to in paragraph 1, which	regroups the access points esta	blished by public and/or private	road operators and/or	service providers				

3. These data shall be accessible for exchange and reuse by any user of road safety-related minimum universal traffic information:





(a) on a non-discriminatory basis;	Are the data referred to in paragraph 3 made available for exchange and reuse on a non-discriminatory basis?	Check how the terms and condition of data exchange and reuse are defined. Check on access point, how access to data is regulated.	Check if data set can be requested/accessed without discrimination.	Accompanying documents/ License terms Entry on NAP Obtaining a data set Survey of the organisation	"non- discriminatory" = equal conditions for all	
(b) within the Union irrespective of the Member State of establishment;	Can the dataset be obtained regardless of the member state? Optional: Has the dataset also been written in English to allow full access to the data for all member states?	Check on NAP if dataset can be obtained regardless of the member state.	Inspect terms of use of data set. Optional: Check if data set is also available in English.	Entry on NAP Accompanying documents/ License terms Obtaining a data set	An actual check is not possible since it is not possible to check from another member state	
(c) in accordance with access rights and procedures defined in Directive 2003/98/EC;	Is the provider a public body? If yes: Do the terms of use/access rights/-procedures comply with the Directive 2003/98/EC? Are the data/services accessible according to the Directive 2003/98/EC?	Check if the company is a public body. Research website of the organisation regarding compliance with the Directive 2003/98/EC.	Inspect terms of use of data set. Survey of the public body. Obtain data set and check compliance with Directive 2003/98/EC.	Research website Accompanying documents/ terms of use Survey of public body Obtaining a data set		
	 Directive 2003/98/EC: PSI Directive: Re-use of public sector information States the following: Article 4 (I): Adherence to a reasonable time limit for processing re-use requests, (2) maximum 20 working days; with possibility of extension to another 20 working days (Notification deadline!); Exceptions(!) Article 5 (I): Provision in all available formats and languages; Article 6: Where charges are made, the total income from supplying and allowing re-use of documents shall not exceed the cost of collection, production, reproduction and dissemination, together with a reasonable return on investment. Article 7: Any applicable conditions and standard charges for the re-use of documents held by public sector bodies shall be pre-established and published, through electronic means where possible and appropriate. Article 8 (I): Re-use without conditions or through a licence, (2) standard licences; Article II: Prohibition of exclusive arrangements 					
(d) within a timeframe that ensures the timely provision of the information service;	Does the time-frame ensure a timely provision of the information service?	Check accompanying documents on how the time-frame for timely provision of the information service is defined.	Obtain data set and check if the time-frame of provision is actually adhered to.	Accompanying documentsObtaining a dataset	Definition of "timely" missing; collect experiences and identify	





			Survey of organisation on quality assurance processes within the organisation. Survey of organisation, for reasons for selection of time-frame	Survey of the organisation	possible guiding value/level; start with recommended level;
(e) through the national access point.	Is the data or data access point registered on NAP?	Check if data or data access point is registered on NAP.	Check if the data is actually accessible.	Entry on NAPObtaining data	
4. Public and private road operators and service providers shall ensure the timely renewal and quality of data made available through their access point.	Do public and private road operators and service providers ensure the timely renewal as well as the quality of the data provided through their access point?	Check accompanying documents on how the time-frame for timely renewal of data is defined. Check service description related to quality of data.	Obtain a dataset and check if the time-frame for renewal is actually adhered to. Survey of the organisation on quality assurance processes.	Accompanying documents/ Service description Entry on NAP Obtaining data set Survey of the organisation	Quality of data: should be described in a document, detailing the quality levels; Timely renewal: Update frequency for dynamic data (events) EU-EIP
Article 8 Dissemination of information					
 Public road operators, service providers and broadcasters dedicated to traffic information shall provide road safety-related minimum universal traffic information to end users prior to the provision of any other non-safety- related traffic information. 	Is road safety-related minimum universal traffic information provided prior to any other non-safety-related traffic information?	Survey of organisation to check if there is a process in place to ensure that road safety-related minimum universal traffic information is provided prior to any other non-safety-related traffic information.	Obtain service and check if this is actually handled in the service as intended in the process.	Survey of organisation Process examination Obtaining service	Distance to the event/incident is essential for information dissemination. Only for listed traffic reports (not route information because it is locally more relevant).
The information service shall fulfil the following conditions: (a) it shall be provided in such a way as to ensure the widest reach of end users concerned by the given event or condition referred to in Article 3;	Through which channels is the information distributed? Which channels are suitable for distributing information in the best possible way to reach a large number	Check accompanying documents for distribution channels.	Survey of the organisation Review the named distribution channels.	 Accompanying documents Survey of the organisation Obtaining 	Difficult to assess how to engage with the highest number of end users



(b) it shall be made available by public and/or private road operators and/or service providers and/or broadcasters dedicated to traffic information, where possible free of charge to end users.	Is traffic information made available, where possible free of charge to the end user?	Check the accompanying documents for licensing models.	Obtain service and check the service for fees.	Accompanying documents and License terms Obtaining a service/data set	Difficult to assess if it is possible to provide the information for free
3. Public and private road operators and service providers shall collaborate to harmonise the presentation of the content of the information provided to end users. They shall inform end users of the existence of the information service and its coverage.	How is the content/the information presented? Are there efforts towards a harmonised graphical user interface? How are end users informed of the existence of the service? Is information provided about the areas covered?	Analyse Accompanying documents.	Survey of the organisation regarding aspirations. Obtain and check of the services/datasets.	Accompanying documents/ Process description Survey of the organisation Obtaining a service/data set	

Article 9 Assessment of compliance with requirements

1. Member States shall designate an impartial and independent national body competent to assess whether the requirements set out in Articles 3 to 8 are fulfilled by public and private road operators and service providers and broadcasters dedicated to traffic information. Two or more Member States may designate a common body competent to assess compliance with these requirements on their territories. Member States shall notify the national bodies to the Commission

2. Public and private road operators, service providers and broadcasters dedicated to traffic information shall provide the designated national bodies with their identification details and a description of the information service they provide, and submit a declaration of compliance with the requirements set out in Articles 3 to 8.	Do public and private road operators, service providers and broadcasters dedicated to traffic information provide their identification details? Do they provide a description of the information service? Is a declaration of compliance with the requirements set out in Articles 3 to 8 submitted?	Check if a self-declaration has been properly completed and signed. Check if a description of the information service is provided. Check if identification details have been provided.	Check if the information is correct (identification data, signing authority). Check for compliance with criteria of Article 9 (2).	Self-Declaration & accompanying documents Entry on NAP	
The declaration shall contain the following elements, where applicable: (a) the road safety-related categories covered and the road network coverage of the information service;	Does the declaration contain the listed elements?	Check of the Self- Declaration.		Self-Declaration	
(b) information on their access point to road safety-related traffic data and its conditions of use;	Is information on the access point to road safety-related traffic data and its conditions of use included in the declaration?	Check of the Self- Declaration.		Self-Declaration Accompanying documents	
(c) the format of the road safety-related traffic data accessible through their access point;	Is the format of road safety-related traffic data included in the declaration?	Check of the Self- Declaration.		Self-DeclarationAccompanying documents	



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(d) the means of dissemination of the information service to end users.	Are the means of dissemination described in the declaration?	Check accompanying documents for means of dissemination.		Self-DeclarationAccompanying documents	
	Are the Self-Declaration & accompanying documents still valid? Are immediate updates for the declarations of compliance in place?	Check Self-declarations and accompanying documents.	Survey of the organisation.	 Self-Declaration Accompanying documents Survey of the organisation 	if a change occurs, the declaration of compliance shall be submitted at the same time as the data set is updated;



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supplementing ITS Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of information services for safe and secure parking places for trucks and commercial vehicles

Article	Key question	Theoretical assessment	Content assessment	Requirements	Open
Article 4 Data collection					
Data on safe and secure public and private parking areas describing the parking facility, to be provided to the users, shall be collected and supplied by public or private parking operators and service providers. The data to be collected shall be easy to provide, including remotely, by any relevant means, in order to facilitate a distant collection by all parking operators.	Is data on safe and secure public and private parking areas provided by public and private parking operators and service providers?	Check if the access point of the data/the data is listed at the NAP.	Check if the data is actually accessible on the NAP.	Entry on NAP Obtaining data set	
Public or private parking operators and service providers shall use DATEX II profiles or other internationally compatible formats in order to ensure interoperability of the information services across the Union.	Is the DATEX II format (CEN/TS 16157) or another DATEX II compatible international machine-readable format used?	Check if DATEX II (CEN/TS 16157) format or another DATEX II compatible international machinereadable format is specified for the dataset on the NAP.	Obtain a dataset and check for DATEX II format or international machine-readable DATEX II compatible format.	Entry on NAP Metadata Obtaining a data set	Availability of a state-of-the-art test centre
The data to be collected shall be the following: 1. Static data related to the parking areas, including (where applicable) — Identification information of parking area (name and address of the truck parking area (limited to 200 characters)) — Location information of the entry point in the parking area (latitude/longitude) (20 + 20 characters) — Primary road identifier!/direction (20 characters/20 characters), and Primary road identifier2/direction (20 characters/20 characters) if same parking accessible from two different roads — If needed, the indication of the Exit to be taken (limited to 100 characters)/Distance from primary road (integer 3) km or miles — Total number of free parking places for trucks (integer 3) — Price and currency of parking places (300 characters)	Is static parking data collected according to the criteria mentioned in Article 4 (1)?	Check on NAP the metadata for compliance with the requirements.	Obtain data set and check for compliance with the requirements.	Entry on NAP Metadata Obtaining a data set	



Information on safety and equipment of the parking area Description of security, safety and service equipment of the parking including national classification if one is applied (500 characters) Number of parking places for refrigerated goods vehicles (numerical 4 digits) Information on specific equipment or services for specific goods vehicles and other (300 characters) Contact information of the parking operator: Name and surname (up to 100 characters) Telephone number (up to 20 characters) E-mail address (up to 50 characters) Consent of the operator to make his contact information public (Yes/No)	Is information on safety and equipment of the parking area collected according to the criteria mentioned in Article 4 (2)?	Check on NAP the metadata for compliance with the requirements.	Obtain a data set and check for compliance with the requirements.	Entry on NAP Meta data Obtaining a data set			
 Dynamic data on availability of parking places including whether a parking is: full, closed or number of free places which are available. 	Is dynamic data on availability of parking places collected according to the criteria mentioned in Article 4 (3)?	Check on NAP the metadata for compliance with the requirements.	Obtain a data set and check for compliance with the requirements.	Entry on NAPMeta dataObtaining a data set			
Article 5 Sharing and exchange of data	Article 5 Sharing and exchange of data						
1. Public or private parking operators and service providers s	hall share and exchange data referred to in	paragraph I of Article 4.					
For these purposes they shall use DATEX II (CEN/TS 16157) format or any DATEX II compatible international machine-readable format.	Is the DATEX II format (CEN/TS 16157) or another DATEX II compatible international machine-readable format used?	Check if DATEX II (CEN/TS 16157) format or another DATEX II compatible international machinereadable format is specified for the dataset on the NAP.	Obtain a dataset and check for DATEX II format or international machine-readable DATEX II compatible format.	Entry on NAP Metadata Obtaining a data set	Availability of a state-of-the-art test centre		
Data shall be accessible for exchange and reuse by any public or private information service provider and/or parking operator on a non-discriminatory basis, and in accordance with access rights and procedures defined in Directive 2003/98/EC.	Is the access to the data non- discriminatory in accordance with access rights and procedures defined in Directive 2003/98/EC?	Check in terms of use in accompanying documents if the same conditions for data access apply to everyone.	Obtain data set and check for reusability and exchange on a non-discriminatory basis.	Accompanying documents/ Terms of use Entry on NAP Obtaining a data set	"non- discriminatory" = equal conditions for all		
	Is the provider a public body? If yes: Do the terms of use/access rights/procedures comply with the Directive 2003/98/EC?	Check if the company is a public body. Research website of the organisation regarding compliance with the Directive 2003/98/EC.	Inspect terms of use of data set. Survey of the public body.	Research of website Accompanying documents/ terms of use			





	 Are the data accessible according to the Directive 2003/98/EC? 		Obtain data set and check compliance with Directive 2003/98/EC.	Survey of public bodyObtaining a data set		
	 Directive 2003/98/EC: PSI Directive: Re-use of public sector information States the following: Article 4 (1): Adherence to a reasonable time limit for processing re-use requests, (2) maximum 20 working days; with possibility of extension to another 20 working days (Notification deadline!); Exceptions(!) Article 5 (1): Provision in all available formats and languages; Article 6: Where charges are made, the total income from supplying and allowing re-use of documents shall not exceed the cost of collection, production, reproduction and dissemination, together with a reasonable return on investment. Article 7: Any applicable conditions and standard charges for the re-use of documents held by public sector bodies shall be preestablished and published, through electronic means where possible and appropriate. Article 8 (1): Re-use without conditions or through a licence, (2) standard licences; Article 11: Prohibition of exclusive arrangements 					
2. The static data shall be accessible through a national or international access point.	Is static data accessible through a national/international access point?	Check if the static data is available on the NAP.	Check if the static data can be obtained through the NAP.	Entry on NAPObtaining a data set		
3. For dynamic data, Member States (or national authorities) shall be responsible for setting up and managing a central national or international point of access referencing all individual single points of access of each truck parking operator and/or service provider on their territory in the interests of users.						
4. Member States may contribute to an international access p 5. Charges for access to, exchange of, and reuse of public or private dynamic data shall remain reasonable as referred to in the PSI Directive.	oint by providing data and ensuring that its How high are the fees charged for access/exchange/reuse of dynamic data? Are they reasonable as referred to in the PSI Directive?	c quality is in conformity with the Check if/what charges are specified in license conditions in accompanying documents. Check if the fee model is transparent and comprehensible.	e requirements in Article 7 Survey of the organisation about the cost models and their compatibility with Article 6 of Directive 2003/98/EC.	Entry on NAP Accompanying documents/ license conditions Survey of the organisation	Reasonable = Costs plus reasonable profit margin Are the costs indexed or are they determined by the private sector? Compliance based on reasonable costs?	
6. Public and private parking operators and/or service providers shall periodically send their static collected data to the national or international access point through	Is collected static data made available electronically on a national or	Check if static data is made available on the NAP and if the data is updated annually.	Obtain data set and use time stamps to check whether data is	Entry on NAPIndicator for NAP updates	(Automated) Reminder process?	





appropriate electronic means no less than once a year for static data referred to in Article 4(1).	international access point? Are these data updated annually?		updated no less than once a year.	Obtaining data set	Is it possible to check the transmission of information and the time of transmission?	
For dynamic data public and private operators and/or services providers shall update their information referred to in Article 4(3) no less than once every 15 minutes.	Is dynamic data from public and private operators and/or service providers updated every 15 minutes?	Check if the update interval is described in the service description and if it corresponds to 15 minutes or less.	Obtain data set and check set for a period longer than 15 minutes.	 Entry on NAP Obtaining data set Accompanying documents/ Service description 		
Article 6 Dissemination of information						
Service providers collecting information at a specific location shall display: — at least the next two safe and secure parking places along a corridor within approximately 100 kilometres	Are there at least the next two safe parking places within a corridor of about 100 kilometres displayed by service providers?	Analyse service description in accompanying documents related to article 6.	Survey of the organisation to analyse processes related to article 6.	Accompanying documents/ Service description Survey of the organisation		
The dissemination of information shall be consistent with the Vienna convention where a Member State has signed it.	Is the dissemination of information in accordance with the Vienna convention?	Survey of the organisation to check if the Vienna Convention is respected in the dissemination of information (road signs).	No content assessment.	Survey of the organisation		
	Vienna Road Traffic Convention or the Vienna Convention on Road Traffic (officially just Convention on Road Traffic) is an international treaty designed to make road traffic safer by standardizing traffic rules. The convention was developed by the UN Conference (United Nations Economic and Social Council's Conference) in Vienna from October 7 to November 8, 1968. Original: https://treaties.un.org/doc/Treaties/1977/05/19770524%2000-13%20AM/Ch_Xl_B_19.pdf German translation: https://www.admin.ch/opc/de/classified-compilation/19680244/index.html Dissemination of information should be based on the requirements of the Vienna Convention. • In general, to unify standards of road signs and signals Where signs should be How they should be constructed What colours informative signs should have That they can be repeatedly attached including distance What shape the signs must have • Symbols and markings as simple and clear as possible to understand,					





	Road signs for parking fall into the "informative signs" category.				
In-vehicle application should have a robust human machine interface in order to avoid driver distraction and fatigue.	No compliance assessment				
Parking operators and/or service providers shall inform the users about the launch of any new information service for safe and secure parking by any communication means they find appropriate.	Do parking operators and/or service providers inform users about the launch of new safe parking information services by any means of communication deemed appropriate? How are new safe parking information services communicated to users?	Analyse service description if users are informed about the launch of any new information service for safe and secure parking.	Survey of the organisation on use of appropriate communication means.	Accompanying documents/ Service description Survey of the organisation	
Article 7 Quality management					
Any change of situation of the parking area, including its closure, shall be immediately notified by public and private parking operators to the national or international access point and to the national authorities.	Are changes of situation reported to the relevant authorities regarding article 7?	Check if information transfers on closed as well as changed parking spaces are provided. Analyse service description regarding update procedure.	Survey of the organisation related to the reporting of situation changes.	Survey of the organisation Accompanying documents/ Service description	Immediately = as soon as it is known or with a reasonable regular update cycle
For each new priority zone, all public and private operators of parking places shall ensure the reliability of the information.	Do public and private operators of parking places ensure the reliability of information for each new priority zone?	Check if there are new priority zones and parking places.	Survey of the organisation.	Survey of the organisation	
For these purposes, they shall carry out periodical controls of the detection equipment, including measuring of the difference between the data displayed and the real availability of parking places.	Are checks carried out on the detection equipment? Is the difference between the data displayed and the real availability of parking places measured?	Assess quality description in the service description.	Survey of the organisation regarding the quality measurement procedures and methods.	Accompanying documents/ Service description Survey of the organisation	Definition: periodical = once a year or according to service level agreement

That information shall be assessed in accordance with Article 8.

Article 8 Assessment of compliance with the requirements

I. Member States shall designate a national body competent to assess whether the requirements set out in Articles 4 to 7 are fulfilled by service providers, parking operators and road operators. This body shall be impartial and independent from the latter.

Two or more Member States may designate a common regional body competent to assess compliance with those requirements on their territories. Member States shall notify the nominated body to the Commission.





 All services providers shall submit a declaration to the designated bodies on their compliance with the requirements set out in Articles 4 to 7. 	Is a Self-Declaration submitted? Is compliance with the requirements set out in Articles 4 to 7 declared?	Self-declaration is duly filled in and signed.	Requirements of Articles 4 to 7 are met (check by compliance assessment).	Self- DeclarationAccompanying documents	Similar to 886/2013
The declaration shall contain the following elements:					
(a) the collected data, pursuant to Article 4 collected on safe and secure parking places for trucks and commercial vehicles including the percentage of parking places registered in the information service;	Does the declaration contain all the information on the collected data, pursuant to Article 4 collected on safe and secure parking places for trucks and commercial vehicles including the percentage of parking places registered in the information service?	Check of the Self- Declaration.		Self- Declaration	
(b) the means of dissemination of the information services to users;	Are the means of dissemination described in the declaration?	Check accompanying documents for means of dissemination.		Self- DeclarationAccompanying documents	
(c) the coverage of dynamic information services on safe and secure parking places;	Is the coverage of dynamic information services on safe and secure parking spaces indicated in the declaration?	Check Self-Declaration and accompanying documents for coverage of dynamic information services on safe and secure parking places.		Self- DeclarationAccompanying documents	
(d) the quality and availability of the information provided, point of access to the information and the format in which that information is provided.	Is the quality and availability of the information provided, point of access to the information and the format in which that information is provided indicated in the declaration?	Check self-declaration and accompanying documents for quality and availability of the information provided, point of access to the information and the format in which that information is provided.		Self- Declaration Accompanying documents	availability of service = 95 % as basic availability

^{3.} Designated bodies shall randomly inspect the correctness of the declarations of a number of public and private service providers and parking operators, and request a demonstration of compliance with the requirements set out in Articles 4 to 7. The quality of the service may also be assessed using user-generated comment. Every year, the designated bodies shall report to the relevant national authorities on the declarations submitted, as well as on the results of their random inspections.