

Progressive comment number	SDIC ID	LMO/SDIC	Comment ID	Chapter, section or clause no/ Subclause No./Annex Title	Paragraph/Figure/Table/Note	Type of comment	Comment (justification for change)	Proposed change	Observations from Comments Resolving Committee	Action Taken
1	Ordnance Survey	LMO	1		Title	E	Add document number to document title	Change title to be D3.10 Draft Implementing Rules for INSPIRE Transformation Services		Corrected.
2	ACTaFOMAS - Association of Cities and Towns and Federal Office of Metrology and Surveying in Austria (BEV)	SDIC	1	1.5		G	The first sentence includes the implication that a Transformation Service (TS) only has to provide one of the possible transformation categories to be a "Transformation Service" in terms of INSPIRE ? In other words it is not an essential item of a Transformation Service to offer all of the possible transformation categories?		A given INSPIRE Transformation Service supports only one transformation category.	
3	Czech Office for Surveying, Mapping and Cadastre	LMO	1 to 2			Technical question	1. Can EPSG codes in GML InputData element override the Source CRS parameter or all EPSG codes in InputData element are ignored? It is the same for different zones of same CRS? Example: Source CRS: ETRS-TM33 (EPSG:25833) Target CRS: ETRS-long.lat (EPSG:4258) INPUT DATA: <gml:featureMember> <gml:Point srsName="urn:ogc:def:crs:EPSG:25833"><gml:pos>4000000</gml:pos></gml:Point> </gml:featureMember> <gml:featureMember> <gml:Point srsName="urn:ogc:def:crs:EPSG:25834"><gml:pos>600000 4000000</gml:pos></gml:Point> </gml:featureMember> OUTPUT: Possibility A: This is invalid. Possibility B: This is valid. But the CRS in GML is ignored, so both points will have same coordinate in output. Possibility C: This is valid. Each point will have different coordinates, because transformation can recognize EPSG codes in GML. 1. Can EPSG codes in GML InputData element override the Source CRS parameter or all EPSG codes in InputData element are ignored? It is the same for different zones of same CRS? Example: Source CRS: ETRS-TM33 (EPSG:25833) Target CRS: ETRS-long.lat (EPSG:4258) INPUT DATA: <gml:featureMember> <gml:Point srsName="urn:ogc:def:crs:EPSG:25833"><gml:pos>400000 4000000</gml:pos></gml:Point> </gml:featureMember> <gml:featureMember> <gml:Point srsName="urn:ogc:def:crs:EPSG:25834"><gml:pos>600000 4000000</gml:pos></gml:Point> </gml:featureMember> OUTPUT: Possibility A: Always use overlaps of Target CRS. Possibility B: Use overlaps of Target CRS only if they are not more than (100km). Possibility C: Always use different zones of Target CRS to keep points in correct zones.		This is an error situation. If the source CRS is given by the input parameter (SourceCRS) and the input data contains geometries in some other CRS, the request isn't consistent and an exception should be raised.	
4	Czech Office for Surveying, Mapping and Cadastre	LMO	2 to 2			Technical question	2. Is it possible to have different zones of one CRS in transformation output or it is necessary to strictly keep one output zone and calculate overlaps? Example: Source CRS ETRS-long.lat (EPSG:4258) Target CRS ETRS-TM33 (EPSG:25833) INPUT DATA: <gml:featureMember> <gml:Point srsName="urn:ogc:def:crs:EPSG:4258"><gml:pos>10 50</gml:pos></gml:Point> </gml:featureMember> <gml:featureMember> <gml:Point srsName="urn:ogc:def:crs:EPSG:4258"><gml:pos>13 50</gml:pos></gml:Point> </gml:featureMember> OUTPUT: Possibility A: Always use overlaps of Target CRS. Possibility B: Use overlaps of Target CRS only if they are not more than (100km). Possibility C: Always use different zones of Target CRS to keep points in correct zones.		This might be an error situation. If the target CRS is given by the input parameter (TargetCRS) and the input data contains geometries that fall too much outside of the indicated zone, the request isn't consistent and an exception should be raised (an overlap of 0.5 degrees is the recommended limit).	
5	AGI - Association for Geographic Information	SDIC	AGI1			G	It is not apparent what is meant by "transformation services". 1.5 identifies format transformations, language translations, geometric transformations and schema translations (later called transformations) as the main types (presumably of transformation service), but most of these are barely mentioned thereafter.	Clarify what is meant by transformation services, and define clear scope for document.	The situation is now clarified by only mentioning the transformation types that currently are in the roadmap: CRS Transformations and ata Model Transformations.	References to other transformation categories removed. Some requirements/recommendations are now emphasized by bold font.
6	AGI - Association for Geographic Information	SDIC	AGI2			G	The document does not contain any "rules" and has no normative statements.	Add some rules for transformation services.		
7	AGI - Association for Geographic Information	SDIC	AGI3	1.3		G	The terminology is inconsistent. The terms "schema mapping", "mapping functions" and "transformation" are used, although it is not apparent what are the differences between these terms .	Use consistent terminology and define all terms used.	The terminological discrepancy mentioned originates from the use of ISO 19118 as a reference standard. This has now been removed and this particular problem does not exist any more.	
8	AGI - Association for Geographic Information	SDIC	AGI4	1.5	Para 1	G	The term schema translation is used, whereas schema transformation was used earlier.	Add definitions of "translation" and "transformation" to Annex A, and use terms consistently	The indicated term has now disappeared, because the corresponding paragraph has been deleted.	Terminology review done..
9	AGI - Association for Geographic Information	SDIC	AGI5	2.2	TRANSFORM operation	T	It is not clear that the transformation operation defined here is adequate for the types of transformation identified in 1.5.	Expand description of Transformation operation for each of the types of transformation identified, and give examples.	The scope of the IR is now reduced to only cover CRS Transformation and Data Model Transformation. It is assumed that the TRANSFORM operation described is adequate for both transformation categories.	
10	AGI - Association for Geographic Information	SDIC	AGI6	2.3		T	It is not apparent why these seemingly arbitrary services levels are stated. It is not sensible to prescribe quality of service levels for all transformation services – they will be dependent on the actual service and the context in which they operate.	Delete prescribed levels of service and replace with general statement about how to specify quality of service, and how the levels should be determined.	According to the Directive, the quality of service requirements have to be in the IR.	
11	AGI - Association for Geographic Information	SDIC	AGI7	Annex A		T	There are many terms used in the document that are not defined.	Add definitions for undefined terms, including transformation service.		Annex A revised and made consistent with the INSPIRE Glossary.
12	AGI - Association for Geographic Information	SDIC	AGI8	Annex A	service	T	The statement "distinct part of the functionality that is provided by an entity through an interface" is meaningless and circular (see definitions of entity and interface). The second part of the definition is better.	Delete "Distinct part of the functionality that is provided by an entity through an interface (ISO 19119). In computing terms, a service is an" and make final sentence a note.	This comes from the ISO Terminology.	
13	CTC-RW - Comité Technique de Cartographie de la Région wallonne	SDIC	1 to x	2.2	PUT TRANSFORMATION Request parameters	T		Indicates the definition to be assigned .		Now changed to be: "Identifier to be assigned to the transformation by the service."
14	Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)	LMO	1	1.2	Article 12	Q	what is meant here by "to link" and "service linking functionality"	please clarify	This is related to the requirements set by the Directive Article 12. However, the interpretation currently is that these requirements do not apply to Transformation Service.	
15	Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)	LMO	2	1.5	last sentence	Q	how are "schema transformation" and "language translations" associated	please clarify	Language translation as a transformation category is now removed.	
16	Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)	LMO	3	2.2	GET SERVICE METADATA operation, Table "Response parameter"	Q	what is meant in particular by "general service metadata"	please clarify and give examples		
17	Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)	LMO	4	2.3	Availability	E	the value of availability is hardly possible	please change the value to 95 %	This becomes concrete in the corresponding TGs. Rejected. 99% seems to be the general requirement chosen for all the other service types.	
18	Royal Netherlands Meteorological Institute (KNMI)	LMO	1	2.1		E	Please breakup the line "For performance ... point of view" . It is very long and hard to understand what is meant here.		"For service performance and robustness reasons this is the recommended way for achieving INSPIRE-compliance through data transformations. However, these approaches are entirely internal to the data provider and thus out of scope from Transformation Service definition point of view." (Should be clear.)	Operation headers made bold.
19	Royal Netherlands Meteorological Institute (KNMI)	LMO	2	2.2		E	Please change formatting so it is more clear which tables and chapters belong together			
20	Royal Netherlands Meteorological Institute (KNMI)	LMO	3	2.3		G	All parts of this chapter should be moved to the Technical Guidelines, as the information as stated is liable to quick change.		According to the Directive, the quality of service requirements have to be in the IR.	
21	Royal Netherlands Meteorological Institute (KNMI)	LMO	4	2.3		E	A reference to the Technical Reference of Performance is not in the technical guideline			Quality of Service requirements added to the TG.
22	Royal Netherlands Meteorological Institute (KNMI)	LMO	5	2.3		G	The definitions of capacity and availability are not unambiguous. E.g., support 10 requests at a time: in what time interval?			Changed to be: 5 requests per second.
23	Royal Netherlands Meteorological Institute (KNMI)	LMO			Draft technical guideline Coordinate Transformation Services					
24	Royal Netherlands Meteorological Institute (KNMI)	LMO	TG1			G	The document should be renamed to "Transformation WPS" to avoid confusion		Rejected.	
25	Royal Netherlands Meteorological Institute (KNMI)	LMO	TG2			G	The relation between the IR and this TG is unclear. Also only GML is mentioned		TG specifies in concrete terms for coordinate transformations what is specified in IR on abstract level for transformations generally. In its current form the TG restricts the input to be encoded in GML Application Schemas as defined by the TWGs.	
26	EUREF - Reference Frame Sub-Commission for Europe of the International Association of Geodesy	SDIC	1	Technical Guidance 2.3	Table 1	G	In case of coordinate transformation the identifier for source and target CRS should have aliases if available		Rejected. This is an identifier, not the name of the CRS; it cannot have an alias.	
27	EUREF - Reference Frame Sub-Commission for Europe of the International Association of Geodesy	SDIC	2	Technical Guidance 2.3	Table 1	G	WCTS metadata should have an information about the accuracy of transformation		Rejected. Accuracy of the transformation depends also on the input data and can be fully determined only after the transformation has been carried out. It is considered too demanding requirement for the service to provide this value.	
28	EUREF - Reference Frame Sub-Commission for Europe of the International Association of Geodesy	SDIC	3	Technical Guidance 2.4	Table 2	G	Aliases for source and target CRS should be provided, if known		Rejected. This is an identifier, not the name of the CRS; it cannot have an alias.	
29	EUREF - Reference Frame Sub-Commission for Europe of the International Association of Geodesy	SDIC	4	Technical Guidance 2.4	Table 2	G	In case of target CRS the recommended pan-European CRS ETRS89 for position and EVRS for height should be the primary CRS			
30	NGI (Nationaal Geografisch Instituut) IGN (Institut Géographique National)	LMO	IGNB1	2.2	1st table (transformation services operations)	T	The description of the GET TRANSFORMATION operation isn't very clear and consistent with the TRANSFORM operation parameters. "This definition can be used as input parameter in a subsequent TRANSFORM operation." which input parameter of the TRANSFORM operation?	Give more details about this input parameter in the TRANSFORM operation, in this table or in the 4th table (TRANSFORM operation request parameters)	These are to be defined by the TWG-RS. MODEL MAPPING is the parameter by which the request can define the transformation or identify a pre-defined transformation. This might be an identifier pointing to a transformation definition (stored into the service by PUT TRANSFORMATION request). This needs to be clarified in the corresponding TG.	MODEL MAPPING is now changed to a better name TRANSFORMATION.

31	NGI (Nationaal Geografisch Instituut) IGN (Institut Géographique National)	LMO	IGNB2	2.2	1st table (transformation services operations)	T	The description of the PUT TRANSFORMATION operation isn't very clear and consistent with the TRANSFORM operation parameters. "This transformation can be referenced later on in a TRANSFORM operation...": how?	Give more details about this input parameter in the TRANSFORM operation, in this table or in the 4th table (TRANSFORM operation request parameters)	See the previous comment.		
32	NGI (Nationaal Geografisch Instituut) IGN (Institut Géographique National)	LMO	IGNB3	2.2	4th table (TRANSFORM request parameters)	T	No link with nor reference to GET TRANSFORMATION and PUT TRANSFORMATION in the description of the parameters of the TRANSFORM operation.	Insert a reference to the GET TRANSFORMATION or PUT TRANSFORMATION.		The reference now added.	
33	NGI (Nationaal Geografisch Instituut) IGN (Institut Géographique National)	LMO	IGNB4	1.5	§1	G	Any planning or priorities for Technical Guidance for the other transformation types?	Give more details about planning or priorities about this subject.		Only the Data Model Transformation is in the roadmap. The reference to other transformation types removed from the IR.	
34	Federal Office of Metrology and Surveying (BEV)	LMO	1	1.2	5	G	As it is generally not necessary to provide transformation services on the MS level, one central question arises: When to realize transformation services?	Please specify reasons and circumstances that make transformation services mandatory for a MS level.		This is now more explicitly stated in 1.2: "If a certain spatial data set being in the scope of the INSPIRE thematic content is not available in conformance with the related data specification, a Transformation Service has to be provided by the MS to make that content conformant."	
35	Federal Office of Metrology and Surveying (BEV)	LMO	2	1.2	12	G	If transformation services are an alternative to establish INSPIRE conformity, what are the thematic areas, where INSPIRE conformity is not mandatory?	Please explain and specify areas for non INSPIRE conformity.		INSPIRE conformity is mandatory, but can be achieved either through data adaptation or Transformation Services. Portal cannot impose any additional requirements, outside of the scope of INSPIRE, or then they must be based on other legislation.	
36	Federal Office of Metrology and Surveying (BEV)	LMO	3	1.2	16	G	If the role of transformation services is a value-adding functionality for a portal, the role of a service provider for this aim has to be defined. A service provider cannot be responsible for all possible existing and future demands of a portal. The responsibility can only lie with the value-gaining body.	Please specify the responsibility of value-adding functionality of portals.		The reference to 'does not follow any standardization' relates to the case of the transformation being internal to the content service, which is considered as not needing any standardization and thus being outside of the scope of the IR. For Coordinate Transformation Service implementation guidelines are given in the related TG. Language translation as a transformation category is now removed.	
37	Federal Office of Metrology and Surveying (BEV)	LMO	4	1.4	1	G	Transformation services should work as intermediate service, which's functionality does not follow any standardization. The feasibility and implementation guideline cannot be seen.	Please specify implementation guidelines for the given kinds of transformation services.		This has now been emphasized in 1.2	
38	Federal Office of Metrology and Surveying (BEV)	LMO	5	1.5	3	G	Language transformations seem to be out of scope: the reason is that machines exchange data, which is a B2B service in general. The role of language is not clear for the SDI. In fact language transformation, if needed, will request further specification.	Further specification and use cases are needed for language transformation.			
39	Federal Office of Metrology and Surveying (BEV)	LMO	6	2.3	2	G	The capacity of the transformation service to support 10 requests at a time seems to be low on one hand and very specific on the other.	Further specification and classification for the capacity of transformation services is needed.		It is now stated as 5 requests per second.	
40	ii - interactive instruments	SDIC	1	all		G	IR put requirements on Member States. However, it is not really clear from the text when a Member State (or LMO) would be required to implement one or more transformation services.	Clearly requirements on MS			
41	ii - interactive instruments	SDIC	2	all		G	At present, the whole IR contains only 2 requirements! 1. "The probability of the Transformation Service to be up shall be 99% of the time" 2. "In the case of a Feature Download Service or a Coverage Download Service, the connected Transformation Service must be required to carry out a two-way transformation, because the data query, expressed according to the common data specifications, must also be transformed (from the common form to the native form)." This seems hardly enough to justify an IR, in particular as the two requirements do not guarantee any significant functionality.	Drop IR or revise IR to specify a clear, testable, consistent set of requirements.		Requirements are now emphasized by bold font.	
42	ii - interactive instruments	SDIC	3	1.4		T	It is unclear how the text and Figure 2 relates to a coordinate transformation service as evidenced by the Technical Guidance document. How does the TG implement a "transform to native query" capability? Is the understanding correct that the same transformation service would need to transform both queries and spatial data sets properly.	Clarify		Query transformation is considered to be too complicated procedure to be included as a requirement to the IR, or described in detail in the current TG. However, the concept is regarded as important and maintained in the IR for possible use in future.	
43	ii - interactive instruments	SDIC	4	Annex A		T		Add definitions not already in INSPIRE Glossary to the glossary. Align definitions with the Directive (e.g. feature). Leave version blank in EPSG CRS URNs		Annex A revised and made consistent with the INSPIRE Glossary.	
44	ii - interactive instruments	SDIC	5	TG - 3		T	OGC URNs are not according to the decisions of the OGC Naming Authority	Reconsider			
45	ii - interactive instruments	SDIC	6	TG - 3		T	Instead of OGC URNs only, identifiers should be used in accordance with the CRS register of INSPIRE (to be established or delegated - this is an outstanding decision). Use of OGC URNs is probably not sufficient.	Reconsider		The decision concerning the use of the URNs should be made generally in INSPIRE.	
46	ii - interactive instruments	SDIC	7	TG - 4		T	URN for the service would need to be registered with the OGC Naming Authority first (and as-is is not aligned with the naming rules, i.e. has almost no chance of being registered).	Reconsider		The decision concerning the use of the URNs should be made generally in INSPIRE.	
47	ii - interactive instruments	SDIC	8	TG - Annex A		T	Messages do not use SOAP. Is SOAP not mandatory for this service?	Clarify		SOAP encodings will be defined in a separate document.	
48	ii - interactive instruments	SDIC	9	TG - Annex B		T	The document does not specify a WSDL. Is no WSDL provided for this service?	Clarify		WSDL will be provided in a separate document.	
49	ii - interactive instruments	SDIC	10	TG		G	It is not clear when a MS would have to implement a transformation service according to this guidance document.	Clarify		The requirement is now more explicit in the IR: "If a certain spatial data set being in the scope of the INSPIRE thematic content is not available in conformance with the related data specification, a Transformation Service has to be provided by the MS to make that content conformant."	
50	Ministère de l'écologie, de l'énergie, du développement durable et de l'aménagement du territoire	LMO	1	Title	Title	E	Document code id not present in title	Title should be: 'D3.10 Draft implementing rule...'		Corrected.	
51	Ministère de l'écologie, de l'énergie, du développement durable et de l'aménagement du territoire	LMO	2	1.5		E	1st paragraph says there are 4 types of transformation : file format, language, geometric and schema. Only the 3 last are further detailed.	Add a detailed paragraph about file format transformation		The situation is now clarified by only mentioning the transformation types that currently are in the roadmap: CRS Transformations and Data Model Transformations.	
52	Ministère de l'écologie, de l'énergie, du développement durable et de l'aménagement du territoire	LMO	3	2		G	Metadata transformation. The IR is about datasets transformation. But what about metadata? Shouldn't there exist also a metadata transformation service, changing metadata to keep them in sync with the changed dataset? Should it be a separate service, or a part of the data transformation service?	Give details on metadata transformation.		As interpreted currently, the IR only covers Transformation Service in connection of the Download Service.	
53	Ministère de l'écologie, de l'énergie, du développement durable et de l'aménagement du territoire	LMO	4	2.3	Performance	G	Performance requirement are said to be defined in Technical Guidance Document. For D3.9, this is done inside the implementing Rule	Express performance requirements the same way in D3.9 and D3.10		Because Transformations can be of different type (Coordinate Transformation and Data Model Transformation currently in the scope), the performance requirements cannot be given in the IR.	
54	Norwegian Mapping and Cadastre Authority	LMO	SK1	Entire document		Ge	This document describes an issue which maybe is not precisely defined in the directive. The content of the document is more like a discussion paper than an Implementing Rule. An example of this is 2.1 Transformation Service Description starting with "In the following discussion Transformation Services is". Clear requirements are missing for several transformation types. In addition, this document deviates from the other IRs in form. For example, it lacks an overview, there is no section on normative references, etc.etc. Other comments will reveal in more detail inconsistencies and missing statements.	Align the document with other IR's.			
55	Norwegian Mapping and Cadastre Authority	LMO	SK2	1.5		Te	The main transformation identified in this IR is 1: Format transformation, 2:language translation, 3:geometric transformations and 4: schema translations. It is stated that format transformation is mostly related to Direct access download services, which is also well defined in the IR on download services. Further on it is stated that language translations are required in most data download transactions. This is not prescribed in the IR on download services. Further on it wordings like "could be carried out..." or "... be based for instance on...". There is no requirement in this IR on language translation, and there is no technical guidance document that will enable interoperable solutions. It is stated that geometric transformations are typically carried out... Again, there is no requirement identified, except from Coordinate Transformation services, which is well defined. Finally, it is stated that Schema transformation has two different meanings, either for mapping from internal schema to external schema, but could also encompass all the above mentioned categories as its components. clearly defined. Requirements and possible transformations should be moved to an introduction or foreword.	Except from Coordinate Transformation services this IR has no clear defined requirements, and it is not clear which transformations that are required. Also the fact that it is only a technical guidance document for WGS78 indicates that this is the only transformation which is clearly required, and this is an individual independent spatial processing Service that could be set up as an internal function (Discovery, view and direct download services). Reword the IR so the requirements are clearly defined. Requirements and possible transformations should be moved to an introduction or foreword.			Document now made more consistent with the other IRs.

56	Norwegian Mapping and Cadastre Authority	LMO	SK3	2,1	3rd para	T	Two-way transformation. It is not clear why the connected transformation service to for example a feature download service is a two-way transformation. What is the impact of this statement.	Clarify	The request might contain elements that are changed by the corresponding data transformation. In this case the request must be transformed (to the opposite direction compared with the data transformation). An example of this is that a bounding box, usually present in a data query, has to be transformed from the CRS used in the calling application to the CRS used in the Download Service. The same obviously applies to the Data Model Transformation. However, because the query transformation capability would significantly complicate the implementation, this capability is currently not a requirement in the IR, nor is it described in the TG.
57	Norwegian Mapping and Cadastre Authority	LMO	SK4		TG Entire document	Ge	This document deviates from the other TG's in form. For example, it lacks an overview. The section on References is the last clause and it is not clear if it is normative references or more like bibliography, etc.etc. Saying that, we agree to the approach of making the WPS as a framework for definitions of various transformation types, and we agree to applying concepts from OGC's discussion paper on VCTS. Other comments will reveal in more detail inconsistencies and missing statements.	Align the document with other IR's.	Document now made more consistent with the other IRs.
58	Norwegian Mapping and Cadastre Authority	LMO	SK5		Foreword (missing)		The technical guidance document on download services has a foreword where saying that "This document does not detail the recommended SOAP framework for implementing the Download service, see http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/network/INSPIRE_NETWORK_SERVICES_SOAP_Framework.pdf ". We suppose a similar statement is also relevant for the technical guidance document for INSPIRE coordinate transformation Service.		The statement added.
59	Norwegian Mapping and Cadastre Authority	LMO	SK6		TG foreword	G	This document does not refer to the recommended SOAP framework for implementing the services http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/network/INSPIRE_NETWORK_SERVICES_SOAP_Framework.pdf . This seems to be an issue that the commission wants to address separate from the technical guidance documents. It is not clear what status this document has, it is not a normative reference. The technical guidance for the download of pre-defined dataset does not use any WPS and/or SOAP binding. It was indicated that it was unnecessary complex. The WPS for direct access has the SOAP conformance class mandatory, but it is not clear if this aligns with the way SOAP is supposed to be applied in the referred document, for example which version of SOAP that should be applied. It is reasonable to believe that SOAP is of major importance because of previous and ongoing discussions of eGovernment, where SOAP is the glue that binds the services together. But recent eGovernment documents places SOAP and REST binding side by side. Another issue is that we do not have enough experience of SOAP, for example efficiency, costs, is it required for service chaining, will invoke services require SOAP to work (probably not), are the advantages and disadvantages that should apply SOAP, and the status of the referenced document (http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/network/INSPIRE_NETWORK_SERVICES_SOAP_Framework.pdf). The INSPIRE service architecture is not a normative reference in this technical guidance document.	The INSPIRE network Service Architecture Version 3.0 states that INSPIRE services should utilize one standard technology binding for all service types. In order to streamline integration and implementation as well as getting a maximum benefit from the offered services, a mix of technologies is to be avoided. Taking all requirements, opportunities and risks into account, the default communication-protocol and binding technology for INSPIRE services should be SOAP (document/literal). Should be is not a normative statement, which again indicates that there may be good reasons to not apply SOAP. Clarify which services that should apply SOAP, and the status of the referenced document (http://inspire.jrc.ec.europa.eu/reports/ImplementingRules/network/INSPIRE_NETWORK_SERVICES_SOAP_Framework.pdf). The INSPIRE service architecture is not a normative reference in this technical guidance document.	Reference to INSPIRE Service Architecture added. The issue related to the application of SOAP has to be clarified consistently for all service types.
60	Norwegian Mapping and Cadastre Authority	LMO	SK7		TG	G	This technical guidance document should give guidance on the implementation of the services defined in the IR. If the IR will only give requirements for coordinate transformation service the current form is OK, but if the revised IR will contain transformation requirements, the technical guidance documents should be restructured with a general description of WPS (and potential SOAP), and how WPS will form a framework for the different transformation services. Secondly the different services should be defined as AP's for WPS, like the existing VCTS.	Depending on the revision of the IR, restructure the TG with a mention on WPS as framework, and the different transformations services as AP's of WPS.	
61	Norwegian Mapping and Cadastre Authority	LMO	SK8		TG 2.3	Te	Target CRS.	Should refer to the official INSPIRE CRS.	TG restructuring not seen appropriate.
62	National Survey and Cadastre, Denmark	LMO	1	1,2	Table 1, Table 2	G	The interpretation of the directive with respect to the MS obligation to provide a transformation service is not clear. It is stated that: "Obviously, it isn't necessary to provide a Transformation Service on the MS level if all the other services are already available in conformance with the related Implementing Rules". However, in the directive it is written that a transformation service shall be established and operated. The interpretation that transformation service is optional seems to be inconsistent with some paragraphs in the directive.	Does this interpretation (that transformation services at MS level are optional) match that of the Commission? If this is the case, it has to be written more clearly in an implementing rule that MS are not obliged to provide any transformation services instead of merely a discussion as it is currently in Section 1.2. According to IR for monitoring and reporting, the use of Transformation Services shall be reported on. If a MS does not have any what will be the consequence on the monitoring on transformation services? Also as the transformation service is listed optional at a MS level, is it then foreseen that the Commission will provide them at European level, e.g., for language transformations?	The definition of the applicable CRSs done by the TWG-RS. IR should clarify the intention of the Directive. In this particular case the interpretation is that Transformation Services are not required unconditionally, but are seen as an alternative to data adaptation. This is now stated more explicitly in 1.2.
63	National Survey and Cadastre, Denmark	LMO	2		Whole document	G	The whole context, role and purpose of the transformation service is not clear. It is obvious that there is a lack of proper use cases. The general service architecture example provided in Figure 2 does not help in understanding the role of the transformation service in a realistic scenario.	The structure and content of the document should be rethought in terms of providing the context and role of the transformation service. As it currently stands it is more confusing than helping. In particular Sections 1.3, 1.4., 1.5 seems to be taken from a bigger context. Why is Section 1.3 focusing on Schema transformations when types are not introduced before Section 1.5? Why is the architecture focusing on one specific (rather unrealistic) scenario? What is the connection of the architecture of Section 1.5 to data interchange as described in Section 1.4? The visions of how transformation services should be used (and which types in which contexts) could be more clearly written. Use cases could be used to support such guidance.	Section 1.3 is now removed, as it seems to cause only confusion. Architecture figures have been redrawn. Corrected. Corrected. Corrected.
64	National Survey and Cadastre, Denmark	LMO	3		Whole document	E	A mix of US English and UK English is used (eg. standardisation - standardization is both used)	Be consistent and use only UK English	
65	National Survey and Cadastre, Denmark	LMO	4		1	E	"The Section 1.2"	Replace with "Section 1.2"	Corrected.
66	National Survey and Cadastre, Denmark	LMO	5		1	E	"The Section 1.5"	Replace with "Section 1.5"	Corrected.
67	National Survey and Cadastre, Denmark	LMO	6		1	G	Lack of use cases and guidance in the use and role of transformation services.	Sections 1.3, 1.4., 1.5 (in an elaborated form) could be put in a separate general technical guideline to guide the use and role of transformation services rather than having only guidance documents for the different types of transformations	1.3 removed, 1.5 reduced to only include Application Schema Transformation and Coordinate Transformation.
68	National Survey and Cadastre, Denmark	LMO	7		Para 6	E	The abbreviation MS is used here. However, the first time the concept member state is used the abbreviation MS should be placed in bracket after the concept	Add "(MS)" after the concept member state is used for the first time.	Corrected.
69	National Survey and Cadastre, Denmark	LMO	8		Para 6	E	Since the abbreviation IR are used many times. The first time the concept Implementation Rules is used it should be followed by a bracket with IR	Add "(IR)" after the concept Implementation Rules is used for the first time.	Corrected.
70	National Survey and Cadastre, Denmark	LMO	9		Para 1 and figure 1	T/E	In the text there is a deviation from figure 1. In the text it is written "implement a mapping functionality (MAI). However, if one look at figure 1 it should be MAI.	Harmonise between the text in chapter 1.3 para 1 and figure 1.	Chapter removed.
71	National Survey and Cadastre, Denmark	LMO	10		Para 1 and figure 1	T/E	In the text there is a deviation from figure 1. In the text it is written "implement a mapping functionality (MBI). However, if one look at figure 1 it should be MBI.	Harmonise between the text in chapter 1.3 para 1 and figure 1.	Chapter removed.
72	National Survey and Cadastre, Denmark	LMO	11		Figure 2	T	What is an INSPIRE client?	Should either be explained or listed in terms	Changed to be "INSPIRE Application". The concept is the same as in INSPIRE Service Architecture.
73	National Survey and Cadastre, Denmark	LMO	12		Figure 2	E	"Data service" is used in figure 2, "content access service" is used in text	Use only one term	Content access service' is used to refer to Discovery/View/Download. Despite of the Directive indicating that a Transformation Service could potentially be connected to all other service types, the interpretation in the later text of the IR is that only Download is relevant. This has now been taken into account by changing the terminology.

74	National Survey and Cadastre, Denmark	LMO	13	1.4	Figure 2	T	This figure raises several questions and potential conceptual problems with the role of a transformation service within INSPIRE (in particular because it is in the IR): 1. Is it not intended that download services provides INSPIRE conformant data? At least according to all theme specifications for Annex 1, a download service is listed as delivery medium. Why would we then need to query native schemas? 2. The client is a central component in the interaction with the transformation service. Is this really feasible? Firstly, it is written in several places that transformation services are usually not made available for the general public. Would this architecture not contradict such statements? Secondly, a client would then besides the view and download service also have to be aware of (and interact with) the transformation service interface. Does this not complicate the infrastructure unnecessarily? Is it not more suited for service-to-service interaction? 3. Is the architecture really suited for all types of transformations? We doubt this, e.g. for performance reasons in schema transformations, but also e.g. for language transformations	The architecture depicted in the figure should be rethought. If its just an example it would be beneficial to clearly write this and perhaps add additional examples. And then perhaps it does not fit in an implementing rule but rather in a technical guidance document. In any case the figure is misleading and raises more questions than it answers.	1. The availability of a Transformation Service is seen as an alternative for providing conformant data. The role of the query transformation is to allow the client application to express the request in the INSPIRE schema. 2. INSPIRE Client refers to an INSPIRE client application. Might be better to use term 'INSPIRE Application' like in the NS Architecture document. Even if the application making use of INSPIRE services calls a Transformation Service does not mean that the end user (and specifically a member of the general public) needs to know about it. 3. The figure is meant to be conceptual. There are ways to reduce communication steps in practical implementations. Architecture figures have been redrawn.
75	National Survey and Cadastre, Denmark	LMO	14	1.4	Figure 2	T	It's written that the calling client is in control of the transformation process (in figure 2), it contradicts another sentence in 1.1 saying that the transformation Service will usually not be made directly accessible for the general public. This is confusing.	Clarify, e.g., what is meant by the general public? If figure 2, describes an unusual scenario, it should not be put in the IR.	By 'general public' we mean end users that are not professional GIS experts (and need not to know anything about coordinate systems or application schemas). By INSPIRE Client in the figure we mean an software application that makes use of the INSPIRE services.
76	National Survey and Cadastre, Denmark	LMO	15	1.5		E	Here schema translations is used but e.g. in Section 1.3 schema transformation is used	Use schema transformation everywhere	The chapter is now removed.
77	National Survey and Cadastre, Denmark	LMO	16	1.5		E	There is an inconsistency in terminology used between the drafting teams. E.g., in section 1.5 is used file formats while the term used in data specifications is encoding	Be consistent	
78	National Survey and Cadastre, Denmark	LMO	17	1.5	Para 3	T	It is stated in the text that there will be established an INSPIRE multi-lingual register. The question is: Is such a register planned?	Clarify if such a register is planned	The referred text is now removed.
79	National Survey and Cadastre, Denmark	LMO	18	2.1		T	Suddenly a specific methodology is in a clear way recommended in order to achieve INSPIRE conformant data. We agree with such recommendation but it is not clear after reading Section 1 in which much emphasis is put on transformation service as an independent node. Again this also belongs more in a guidance document rather than in the IR.	Create a general technical guidance for transformation services and make such recommendations there.	Various multilingual registers are in planning. The Transformation Service as an independent service node is in the focus of the IR, because it is the only architecture alternative that requires an external interface to be defined. However, it was felt necessary to stress in the IR that there are other ways to integrate transformation functionality into the process.
80	National Survey and Cadastre, Denmark	LMO	19	2.2		T	The operation 'is transformable' makes sense in some contexts (e.g. for coordinate transformations where this operation obviously comes from). However, in other contexts e.g., for schema transformations it does not make sense. Often it cannot be deduced whether a transformation is possible until the transformation has been fully executed. An implementation could rather focus on making proper exception handling, which also for coordinate transformation would make 'is transformable' obsolete. Thus, having 'is transformable' as mandatory does not make sense.	We strongly recommend to make the operation 'is transformable' optional.	
81	National Survey and Cadastre, Denmark	LMO	20	2.2		T	The use of 'mode' in source model and target model strongly implies a certain type of data. Does not make sense for e.g. geometry and language.	Delete model and use Source and Target instead	Accepted. IS TRANSFORMABLE now made optional.
82	National Survey and Cadastre, Denmark	LMO	21	2.3		T	It seems rather inconsistent to have performance criteria in a guidance document when they for the remaining service types are defined in the IR	We suggest to remove performance criteria completely	Rejected. MODEL seems to be appropriate for Coordinate Transformation and Application Schema Transformation. Other transformation types are now removed.
83	National Survey and Cadastre, Denmark	LMO	22	2.3		T	The capacity criteria is not clear. 10 requests at a time could also be just to place requests in a queue. Is this what is meant? In download service, capacity is defined in the terms, not in transformation services. Is this intentional?	Be more specific	This inconsistency stems from the fact that the Transformation Service IR is supposed to serve as the abstract reference document for various TGS focusing on different kinds of transformations. The Service is supposed to operate according to the performance requirements for all the simultaneous requests indicated in the capacity requirement.
84	National Survey and Cadastre, Denmark	LMO	23	2.3		T	The availability criteria at 99% is not clear. Is this measured against 24/7 scheme? Then 99% is very high.	Either add during normal working hours or relax requirement	This is seen rather as a probability for the service to be available and working according to the performance and capacity requirements. Now changed to be '5 requests per second'.
85	National Survey and Cadastre, Denmark	LMO	24	2.3	Availability	T	Please define for how long time the 99% must be calculated over.	Clarify the length of the calculation time	See the previous comment.
86	National Survey and Cadastre, Denmark	LMO	25	A		E	The terms included does not match those of the download service (e.g. availability and capacity)	Be consistent	Annex A revised and made consistent with the INSPIRE Glossary.
87	National Survey and Cadastre, Denmark	LMO	26	Annex A	Data	T	This term should be included in the INSPIRE glossary	Include the term in the INSPIRE glossary	See the previous comment.
88	National Survey and Cadastre, Denmark	LMO	27	Annex A	Datasets	E/T	There is not used the same definition in this document as in the INSPIRE glossary	Harmonise between the definition used here and in the INSPIRE glossary	See the previous comment.
89	National Survey and Cadastre, Denmark	LMO	28	Annex A	feature	E/T	In the INSPIRE glossary there is a note in the definition. This note is absent in the definition used in this document	Add the note from the INSPIRE glossary into the definition used here	See the previous comment.
90	National Survey and Cadastre, Denmark	LMO	29	Annex A	performance	E/T	The definition of performance is absent from the INSPIRE glossary	Add the term and definition performance to INSPIRE glossary	See the previous comment.
91	National Survey and Cadastre, Denmark	LMO	30	Annex A	profile	E/T	In the INSPIRE glossary there is a note in the definition. This note is absent in the definition used in this document	Add the note from the INSPIRE glossary into the definition used here	See the previous comment.
92	National Survey and Cadastre, Denmark	LMO	31	Annex A	resource	E/T	There is not used the same definition in this document as in the INSPIRE glossary	Harmonise between the definition used here and in the INSPIRE glossary	See the previous comment.
93	National Survey and Cadastre, Denmark	LMO	32	Annex A	security	E/T	The definition of security is absent from the INSPIRE glossary	Add the term and definition security to INSPIRE glossary	See the previous comment.
94	National Survey and Cadastre, Denmark	LMO	33	Annex A	service	E/T	The definition of service is absent from the INSPIRE glossary	Add the term and definition service to INSPIRE glossary	See the previous comment.
95	National Survey and Cadastre, Denmark	LMO	34	Annex A	service request	E/T	The definition of service request is absent from the INSPIRE glossary	Add the term and definition service request to INSPIRE glossary	See the previous comment.
96	National Survey and Cadastre, Denmark	LMO	35	Annex A	spatial data	E/T	There is not used the same definition in this document as in the INSPIRE glossary	Harmonise between the definition used here and in the INSPIRE glossary	See the previous comment.
97	National Survey and Cadastre, Denmark	LMO	36	Annex A	spatial resource	E/T	The definition of spatial resource is absent from the INSPIRE glossary	Add the term and definition spatial resource to INSPIRE glossary	See the previous comment.
98	National Survey and Cadastre, Denmark	LMO	1	1		G	The argumentation of using the OGC WPS is not well-founded. The use of WPS in particular for transformation tasks is not really proven.	Better argumentation or alternative approach	There seem to be no better alternatives.
99	National Survey and Cadastre, Denmark	LMO	2	1, A, B		G	We assume the recommendation of using WSDL/SOAP applies for transformation services as well even though this is not stated anywhere? The messages presented in appendices are not SOAP	Clarify, if WSDL/SOAP is recommended at least the messages given should also be SOAP	SOAP encodings will be defined in a separate document.
100	National Survey and Cadastre, Denmark	LMO	3	Whole document		T	If WSDL/SOAP is recommended, the use of the OGC WPS does not seem to be a logical choice. The encapsulation of the WPS in WSDL/SOAP is merely overhead and does not provide much value. The WSDL is intended to specify an interface with parameters. The WPS is just a generic interface that described in WSDL, will not fulfil the intended purpose. The WPS can be suited for any kind of not well-known processing service types. In INSPIRE, well-defined transformation type have (would be) defined. Thus, it would be much preferred if the WSDL/SOAP standard is then used to publish these well-known interfaces instead of hiding all parameters etc behind the interface.	Define a proper interface for each well-known transformation type instead of using the OGC WPS (if WSDL/SOAP is recommended). Then using WSDL to describe this interface (would be) much preferred and simplify implementations.	There are some clear benefits in using WPS: 1. There are free software libraries that provide a major part of the processing required - the service developer needs to only add the actual transformation process. 2. Existing WPS service implementations used for other purposes can easily be augmented to include INSPIRE transformations. 3. There is ready support for asynchronous requests. 4. The same framework can be applied also to other transformation types to be potentially introduced in future. 5. If the transformation service is specified from scratch just for INSPIRE purposes, it has much less chance to become implemented by vendors, when compared with an interface that follows OGC-defined standard.
101	National Survey and Cadastre, Denmark	LMO	4	3	Table 3	T	The abstract operation get service metadata is mapped to two operations when using OGC WPS. Again using the WPS seems not logical.	Avoid using the WPS as implementation and define proper interfaces for each transformation type which are closer to the abstract interface	See the previous comment.
102	National Survey and Cadastre, Denmark	LMO	5	Whole document		E	In the draft implementing rule of the transformation service, it is written that the performance criteria of quality of service will be stated in the guidelines rather than in the IR. Should it then not appear in the guidelines?	If its decided that there shall be a performance criteria in the guidance document it should appear somewhere	Have been now added.
103	National Survey and Cadastre, Denmark	LMO	6	Whole document		G	The WCTS was never really fully implemented in a production environment to our knowledge. We don't think that this is because of its interface, but fear that the lack of its usage is based on other problems/issues. Would we not risk to inherit those problems by just mapping the WCTS interface to the WPS interface?	This is just a concern. It would have been nice to have an assessment of why the WCTS never made it into a specification and remained as discussion paper.	Only the main concepts are taken from the WCTS. One of the possible reasons for WCTS not becoming widely implemented is that it might be represent too specific functionality to gain support from vendors.
104	National Survey and Cadastre, Denmark	LMO	7	A, B		T	In the message, GML 3.1.1 schema is referred. All specifications of Annex 1 data theme uses GML 3.2.1. It would be nice to use examples with the same version of GML (e.g., the GML included in Annex B is not valid GML 3.2.1)	Use GML 3.2.1 instead	GML 3.2.1 version should be used. Has to be modified.

105	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	1	1.4	"Service architecture" / 3th paragraph	T	This paragraph says that the query transformation is needed when calling application does not know the native data model.	This is correct but, it must be added or the native database doesn't know how to transform the data "on-the-fly" to INSPIRE model, because in this case is neither necessary to know the native data model	Should be self-evident.
106	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	2	2.1	"Description:" / 2nd paragraph	T	As mentioned in this paragraph, it is very important to clarify to all the MSs that for service performance and robustness reasons the "on-the-fly" transformation organized on top of a native database is the recommended way for achieving INSPIRE-compliance through data transformations.	This fact should be presented at the beginning of the document and it should be exposed with much more emphasis to ensure all readers and all MSs have it very clear. At the present document it is explained too briefly and not with the importance it should have.	This alternative is not really in the focus of the IR.
107	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	3	2.3	"Capacity" / "Availability"	T	It is difficult to concrete a capacity and an availability for the processes in general terms. It should depend on different aspects such as: data theme (is the data necessary for emergency tasks?), data provider (is the provider a small Council or is a big corporation?), and many others.	To give general and concrete advices to help improve performance on the services instead of requiring a concrete capacity and availability.	According to Directive, minimum performance criteria must be given in the IR.
108	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	4				It is a good idea to define WCTS as a profile of WPS or not?	Proposed change	See comment number 100.
109	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO			INSPIRE Draft Technical Guidance for INSPIRE Coordinate Transformation Services: Comments Sheet				
110	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	5	2.2	Paragraph 1	E	Mistake	Change "GetCapabilities" for "GetCapabilites"	Corrected.
111	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	6	5	Paragraph 1	T	QoS criteria need to be established in the IR for WCTS services according to the Directive	Add a new Section 5 titled "Quality of Service" establishing at least: Performance 1Mb/s Capacity 10 requests persecond Availability 99%	A new chapter for this now added.
112	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	7	7	Transformable	G	It is a good idea to define WCTS as a profile of WPS or not?	Proposed change	See comment number 100.
113	IDEA Working Group of the Commission on Geomatics (National Geographic High Council)	LMO	8	7	Transformable	G	It looks a little rare having an Exception Code which actually is not an exception...	To add a new Output parameter for the Execute process to handle the result of the ISTransformable's output value instead of using the exceptions system.	
114	National Land Survey of Finland	LMO	1	1.4	IR Service Architecture	G	NLS Finland favours the approach where Transformation functionality is either incorporated into the content service, or tightly layered on top of it, e.g. in form of a Transforming WFS service. This is the easiest method to implement and no complex request/service chaining is needed. However, there are use cases for which Transformation service interfaces should also be available.	Please clarify what registry will be used for identifying CRSs and transformations between them. To ensure Initial Operating Capability, assign EPSG as the initial CRS identifier authority.	This depends on the INSPIRE CRS registry setup.
115	National Land Survey of Finland	LMO	2	3	TG Mapping to the INSPIRE Transformation Service IR	T	The CRS identifier AUTHORITY for SOURCE / TARGET MODEL -parameters has not been defined. EPSG should be chosen as the initial identifier AUTHORITY due to the wide-spread usage of EPSG codes in GIS server and client applications. EPSG codes are also mentioned in the ISO 19128 WMS interface specification.	Consider a capacity requirement at a range from 1 to 5 simultaneous users.	Accepted. Capacity requirement now set to 5 requests per second.
116	National Land Survey of Finland	LMO	3	2.3	IR Quality of Service	T	Capacity requirement 1 MB/s for 10 simultaneous users may be too hard to fulfill.	Please clarify how the required availability is to be calculated, or state that it is left to each member state to decide.	'of the time' has now been removed; this is a probability figure.
117	National Land Survey of Finland	LMO	4	2.3	IR Quality of Service	G	Service availability is required to be at least 99% of the time. It has not been defined, whether this figure is calculated using 24/7 principle or within working hours.	Add at least following normative references: http://portal.opengeospatial.org/files/?artifact_id=24151 http://portal.opengeospatial.org/files/?artifact_id=13204 http://portal.opengeospatial.org/files/?artifact_id=8847	References list has now been reviewed.
118	National Land Survey of Finland	LMO	5	1	Introduction	E	Normative references are incomplete.	The centralization stage of transformation repository issue shall be included in 1.4 or in overall INSPIRE architecture.	There are no plans to establish a centralized EU-repository of transformations.
119	National Land Survey of Finland	LMO	6	1.4	IR Service Architecture	G, T	Regarding Transformation Services Architecture in a cross-border context, it is expected sooner or later to confront the need to add registry, repository and delivery service for transformation (e.g. schemas, concepts, data product specifications). Including all transformation types it would result in an extensive expansion component or effort with diverse functionalities: e.g. when updating schema and language transformations, a centralized delivery service is required. The logical outcome of this is to structure transformations in national and on the other hand joint re-usable transformations, which are continuously maintained in centralized EU-repository. Justification to the EU repository would be to provide access to cross-border needs. Updating needs are abundantly due to e.g. as more and more disciplines and topics connecting to the national SDI result to additional specifications in concepts and terms used as well as evolutionary specification of schemas for all transformations types, to say nothing of deviations of different languages based on administrative, etymological or cultural origins and Performance - wrong definition: "how fast a service request can be completed" means speed, not performance; these are complementary definitions	Speed: The speed of a web service represents how fast a service request can be completed, it is the reciprocal of the time to completion (v = 1/t). The performance of a web service represents how many service requests can be completed in a given time interval. Right definition see in D3.5 V3-0. "The performance of an INSPIRE service represents the service response time, which must be kept for the given capacity. A service request is understood as a single call to a single operation of an INSPIRE service. Response time is the time measured on the server, in which the service operation returned the first byte of the result."	Performance can be measured in different ways. Concrete implementation is described in the corresponding TGs.
120	Institute of Geodesy, Cartography and Remote Sensing	LMO	1	Annex A	Terms and definitions	T		Be more precise.	Terminology has now been changed. Invoke Service will be specified in a later time.
121	Lantmateriet, National Land Survey	LMO	1			G	The IR is very general written. The rules can be interpreted in many different ways. That counteract interoperability.	Document pointed to four types of transformations, (file format transformations, language translations, geometric transformations and schema translations). Instead of language translation it might be more precise to refer to (semantic transformation) that cover both language translations and meaning, and will fit with the suggested method suggested in the IR see the same section (ontology-aided semantic matching).	Language translation as a transformation category is now removed.
122	Lantmateriet, National Land Survey	LMO	2	1.4		T	This section represents a complex processes that includes requests and responses service, these services can be stringed together and refer to (Service chaining) instead. The document refer to INSPIRE content access service (Discovery/View/Download), what about "invoke spatial data service" as specified in Metadata IR.	Specify that time is referring to working hours	'of the time' has now been removed; this is a probability figure.
123	Lantmateriet, National Land Survey	LMO	3	1.5		T	Document pointed to four types of transformations, (file format transformations, language translations, geometric transformations and schema translations). Instead of language translation it might be more precise to refer to (semantic transformation) that cover both language translations and meaning, and will fit with the suggested method suggested in the IR see the same section (ontology-aided semantic matching).	Shorter captions	
124	Lantmateriet, National Land Survey	LMO	4	2.3	Availability	T	"... service to be up shall be 99% of the time". What time is the IR referring to? Working hour? 24-7?		Yes, the mapping to the WPS DescribeProcess metadata is described in the Table 1.
125	Lantmateriet, National Land Survey	LMO	5		Technical Guidance draft technical Guidance for Inspire Coordinate Transformation services, § 2.1 Services Metadata in WCTS draft technical Guidance for Inspire Coordinate Transformation services, § 2.4 Process execution	G	Captions in the document are too long and unclear		The implementation of the IS TRANSFORMABLE operation is described in the last paragraph of Chapter 5 (previously Chapter 3). The stated performance requirements must be maintained for all of the simultaneous requests specified in the capacity.
126	General Administration of Patrimonial Documentation	LMO	1			G	Is that all metadata elements of the Content section (transformation, Method, Source CRS, target CSR, FeatureAbilities/GeometryType, FeatureAbilities/FeatureFormat) must be present (describe) systematically in the XML File.		
127	General Administration of Patrimonial Documentation	LMO	2			T	The draft says: "In addition to the service metadata query, GetCapabilities, the only mandatory operation defined in the WCTS is the Transform operation". But what about the IS_Transformable operation (who tests whether the service is capable of transforming a specific type of geometry between two reference systems)? This operation is not describing in the technical Guidance.		
128	SHOM (Service Hydrographique et Océanographique de la Marine)	LMO	1	2.3	Paragraph "Capacity"	T	Specification of a number of simultaneous request is not sufficient. A delay must be added,	Transformation service is required to support 10 request at a time with a maximum delay of ...	
129	SITAD SP - Sistema Informativo Territoriale e Ambientale Diffuso del Sistema Piemonte	SDIC	1 to 1	"2.2"		G	Probably, could be important to highlight each differences from OGC standards and explicitly underline which services and which kinds of name and methods for that services are completely equal. In general, could be also important to point out if Inspire services specifications mean simply extend OGC standards or, when necessary, also trying to changing them.		No changes have been identified for the existing OGC specifications.
130	GIS-Flanders - SDI GIS-Flanders	SDIC	1	2.2	TRANSFORM operation	G	"Model mapping is optional if a default exists." Does this mean that if no default value exists, this parameter is mandatory? Isn't "conditional" more applicable here instead of "optional"?		Corrected.
131	GIS-Flanders - SDI GIS-Flanders	SDIC	2	2.3	Availability	G	A download service has to be available for 99% of the time. If a transformation service is a part of a downloadservice, does this 99 % mean 99% of the time the download service is available or just 99 % of the time overall (so no relationship between both availabilities)?		The Quality of Service figures are given individually for each service.

132	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	1	all	G	IR put requirements on Member States. However, it is not really clear from the text when a Member State (or LMO) would be required to implement one or more transformation services.	Clarify requirements on MS	
133	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	2	all	G	At present, the whole IR contains only 2 requirements: 1. "The probability of the Transformation Service to be up shall be 99% of the time." 2. "In the case of a Feature Download Service or a Coverage Download Service, the connected Transformation Service must be required to carry out a two-way transformation, because the data query, expressed according to the common data specifications, must also be transformed (from the common form to the native form)." This seems hardly enough to justify an IR, in particular as the two requirements do not guarantee any significant functionality.	Drop IR or revise IR to specify a clear, testable, consistent set of requirements.	Comments 132-141 are the same than 41-50.
134	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	3	1,4	T	It is unclear how the text and Figure 2 relates to a coordinate transformation service as evidenced by the Technical Guidance document. How does the TG implement a "transform to native query" capability? Is the understanding correct that the same transformation service would need to transform both queries and spatial data sets properly.	Clarify	Comments 132-141 are the same than 41-50.
135	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	4	Annex A	T		Add definitions not already in INSPIRE Glossary to the glossary. Align definitions with the Directive (e.g. feature). Leave version blank in EPSG CRS URNs	Comments 132-141 are the same than 41-50.
136	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	5	TG - 3	T	OGC URNs are not according to the decisions of the OGC Naming Authority		Comments 132-141 are the same than 41-50.
137	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	6	TG - 3	T	Instead of OGC URNs only, identifiers should be used in accordance with the CRS register of INSPIRE (to be established or delegated - this is an outstanding decision). Use of OGC URNs is probably not sufficient.	Revise statements	Comments 132-141 are the same than 41-50.
138	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	7	TG - 4	T	URN for the service would need to be registered with the OGC Naming Authority first (and as-is is not aligned with the naming rules, i.e. has almost no chance of being registered).	Reconsider	Comments 132-141 are the same than 41-50.
139	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	8	TG - Annex A	T	Messages do not use SOAP. Is SOAP not mandatory for this service?	Clarify	Comments 132-141 are the same than 41-50.
140	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	9	TG - Annex B	T	The document does not specify a WSDL. Is no WSDL provided for this service?	Clarify	Comments 132-141 are the same than 41-50.
141	Lenkungsgrremium GDI-DE (Steering Committee GDI-DE) (explanation: GDI-DE = Spatial Data Infrastructure Germany)	LMO	10	TG	G	It is not clear when a MS would have to implement a transformation service according to this guidance document.	Clarify	Comments 132-141 are the same than 41-50.
142	Federal Office of Topography (Switzerland) - swisstopo	LMO	1	whole documents	G	The following comments concern both the Draft Implementing Rules for INSPIRE Transformation Services (DIR) and the Draft Technical Guidance for INSPIRE Coordinate Transformation Service (DTG). The DIR specifies a general set of transformations to be implemented for INSPIRE, such as format translations, language translations, geometry transformations, and schema transformations. (In this context, the term "schema" shall mean "transfer format schema" (e.g. OML Application Schema) and must not be mistaken with conceptual model definitions of any kind. In general, the INSPIRE Specifications seem not to differentiate this circumstance in a sufficient way.) Geometric transformations shall include simple generalisation operations and also coordinate reference system (CRS) transformations. CRS transformations are among the first to be implemented in a future European SDI.		
143	Federal Office of Topography (Switzerland) - swisstopo	LMO	2					The term 'Data Model Transformation' is now proposed.
144	Federal Office of Topography (Switzerland) - swisstopo	LMO	3			The DIR defines a number of transformation service operations which fit well into the operations defined in OGC WPS Implementation Specification (see below).		
145	Federal Office of Topography (Switzerland) - swisstopo	LMO	4			The DIR is written in a quite general and abstract way. On one hand, this circumstance assures versatile implementation. On the other hand, no concrete roadmap towards the implementation is given. As a matter of fact, INSPIRE has to be adopted within a relatively short period of time according to the quite ambitious INSPIRE implementation roadmap.		
146	Federal Office of Topography (Switzerland) - swisstopo	LMO	5			The specification of the DTG is based on only one OGC document, the "OGC OWS-5 Considerations for the WCTS Extension of WPS" discussion paper written by M. Martinez (Document reference: OGC 08-054r1, website: http://www.opengispatial.org/). There is no stand-alone standard for coordinate transformation services, which leads to the above mentioned discussion paper (There is no standard since OGC WCTS is suspended as of version 0.4.0). We consider this fundament for the DTG being too weak. There should be a concrete implementation of a WPS application profile for coordinate transformations including an according software framework. At least a proposition for testing should be made.		Actually the referenced document "OGC OWS-5 Considerations for the WCTS Extension of WPS" is not used while writing the TG. The extension in that document is on processing of raster content.
147	Federal Office of Topography (Switzerland) - swisstopo	LMO	6			Another concern is the actual definition of CRS transformations. Neither the DIR nor the DTG go further than defining CRS mappings in a descriptive way. The same is true for the "data specifications with regards to Coordinate Reference Systems" stemming from the INSPIRE thematic working group TWG-RS (Document V2, April 20, 2009). There should be a list and/or an explicit definition of transformation algorithms. This could be accomplished in terms of a "how-to" for defining explicit CRS mappings.		Transformation algorithms are not in the scope of this IR or TG. These documents define only the service access interface.
148	Federal Office of Topography (Switzerland) - swisstopo	LMO	7			The definition, handling, and application of CRS identifiers seem unclear. There are several systems for identifying CRS like EPSG (EPSG website: http://www.epsg.org/) or CRS-EU (CRS-EU website: http://crs.bkg.bund.de/crs-eu/). None of these sources provides CRS information which can be used directly in a concrete coordinate transformation service. Here too, a proposition for testing should be made.		The decision depends on the establishment of the INSPIRE registries.
149	CENIA, Czech Environmental Information Agency	LMO	1	Annex A. Terms and definitions	E	The explanation of the term "security" is very complicated because of the word non-repudiation, that makes the sense of the definition very unclear. We had to consult a native English for an explanation, but he also had to look the word up in a dictionary.		This is standard IT terminology.