



**DELIVERABLE D5.2.2**

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**InGeoCLOUDS indicators :**  
**Usability & QoS for end-**  
**users and IT users**  
  
**D5.2.2**  
**Version 1.0**  
  
**Reference D5.2.2-INGC**

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<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
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<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	



## *Deliverable D5.2.2*

# InGeoCLOUDS indicators : Usability & QoS for end-users and IT users

Ref. : D5.2.2-INGC  
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Document Number : D5.2.2-INGC

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### Abstract

Since the opening of Pilot1, consortium members experienced concrete practice and new services development and integration on the InGeoCloudS platform. Pilot2 use has then been opened for free trial to other institutions. A couple of these engaged first steps. The whole process permitted to contemplate a number of QoS and usability indicators when using the platform for integration of datasets, of web services in every day operations. The feedback and facts on use cover both scientists (geologists) and IT teams. Additionally some surveys towards various communities give first insights on how InGeoCloudS has been perceived from the outside so far. This document synthetizes these inputs in a structured manner and tries and identifies yet possible tracks of improvements for InGeoCloudS.

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### Keywords List

*Feedback, facts, surveys, QoS, usability, quality perceived, user satisfaction.*



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#### DOCUMENT CHANGE LOG

Document Issue.	Date	Reasons for change
<b>D5.2.1</b>	2014-01-20	Intermediate version of the document: status at M24.
<b>D5.2.2</b> Version 1-Draft 1	2014-04-22	Creation of the document
Version 1-Draft 2	2014-05-15	Document changed according to the consortium meeting of May 13 <sup>th</sup> deciding of a change in the contents
Version 1 - FinalDraft 1	2014-06-12	Document proposal
Version 1-FinalDraft 2	2014-07-05	Document change including all comments and changes
Version1-Approved	2014-07-09	Last edition revisions / checks; ready for delivery

#### APPLICABLE AND REFERENCE DOCUMENTS (A/R)

A/R and Document Reference	Title
[A1] ICT PSP Grant Agreement N° CIP 297300	InGEOCloudS Grant Agreement and its annex (including the description of work)
[R1] D2.1-INGC v1.1	Use Cases for InGeoCloudS Data and Services
[R2] D6.1-INGC	InGeoCloudS Web Site
[R3] D4.1-INGC	InGeoCloudS Pilot1 on the Internet
[R4] D4.2_INGC	InGeoCloudS Pilot2 on the Internet
[R5] D3.3-INGC	InGeoCloudS Maintenance Plan and Service Profiling
[R6] D5.2.1-INGC	InGeoCloudS indicators version 1



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## 1. INTRODUCTION

### 1.1. ACRONYMS AND DEFINITIONS

Term	Definition
N/A	Not Applicable
API	Application Programming Interface
CSP	Cloud Service Provider
DU	Data Users
DP	Data Providers
GRMiGA	Groundwater Resources Management in Granular Aquifer
INSPIRE	Infrastructure for Spatial Information in the European Community
OGC	Open Geospatial Consortium
GUI	Graphic User Interface
AWS	Amazon Web Services
SSH	Secure Shell (secured exchange protocol)
RMiGA	Ressource Management in Granular Aquifer
WMS	Web Map Service

Table 1 : Main acronyms used in the document

### 1.2. OBJECTIVES OF THE DOCUMENT

The INGC pilot 1 and 2 are the technical implementations of the project requirements. The WP5 focuses on the evaluation of the project by its diverse types of users and is notably a source of information and new requirements for the technical developments taking place in WP3 and WP4. While we cannot report a lot about external use in this iteration of the document, the systematic and regular participation of internal teams in the evaluation of the platform at its different stages permitted to contemplate a number of QoS and usability issues when using the platform for integration of datasets, of web services in every day operations.

This iteration of the document is dedicated to the evaluation of the infrastructure by the IT users (AKKA, CNR, BRGM, FORTH) as well as by project's data providers (BRGM, EKBA, EPPO, GEO-ZS, GEUS) at month 28.

### 1.3. OVERVIEW OF THE DOCUMENT

Chapter 2 "*Means implemented to get feedback*" reports on the status of feedback and presents the means that have been used to reach users feedback for INGC.

In order to assess Information Systems in general, two ISO standards are relevant:

- ISO 25010 is about the System assessment
- ISO 9126 is about Quality in Use assessment



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The consortium has used these two standards as a reference to structure the product evaluation (Chapter 3) and its use evaluation (Chapter 4).

Chapter 5 gives the details and results of the user's feedback.

The last chapter (6) provides the outcome and conclusion of the Quality of the system and its usability and proposes several paths for future improvements of the platform.

## 2. MEANS IMPLEMENTED TO GET FEEDBACK

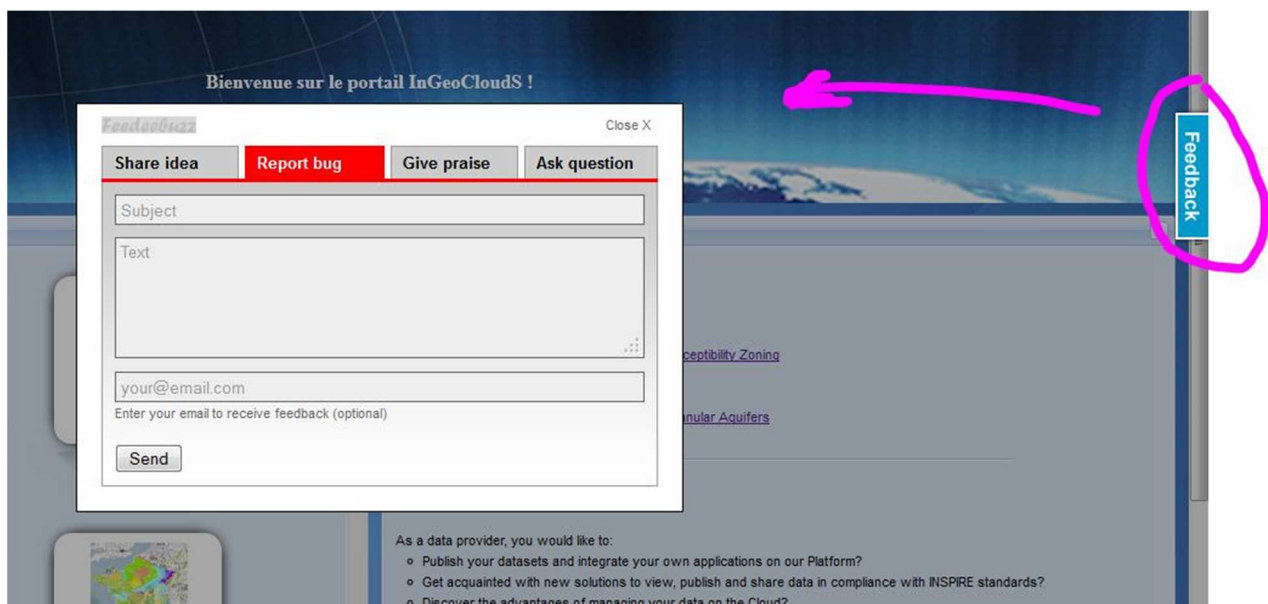
This innovation project has to fulfil users' requirements in order to be relevant.

A multiple-tools strategy was implemented to allow evaluation by the people who may need a Cloud platform to process or distribute their data, including:

- Direct feedback channels
- Users and IT users surveys,
- Workshops demonstrations,
- Active communication towards potential users

### 2.1. DIRECT FEEDBACK CHANNELS

As described in the note accompanying D4.2 [R4], a Feedback form is systematically present on each page of the portal, including geo applications related to the different use cases in order to receive prime information while the user is using the Pilot.



An email is then sent to a generic address that covers a team composed of several partners' collaborators who are thus informed and required to handle the feedback according to helpdesk/support service processes defined in D3.3 (see [R5]).

The generic support/contact email addresses are also mentioned in different places in the Pilot and on the WWW site in order to invite readers/users to communicate with the project's helpdesk. Partners of the project also all have direct accounts on the Mantis bug and issues tracker tool for an ordered and systematic reporting of bugs, improvement suggestions, etc.

### 2.2. USERS AND IT USERS SURVEYS

The appendix of this document gives the detail of the survey submitted to INGC Users and IT users to get feedback and accurately evaluate the strength and weaknesses of the project.



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#### **2.3. WORKSHOPS AND DEMONSTRATION**

Pilot 2 was demonstrated in Brussels during the 2<sup>nd</sup> INGEOCLOUDS International Workshop. This in particular included a hands-on session and insights into Technical Aspects of the Pilot2:

- [Browsing the Architecture](#)
- [ElasticDB and DataImport Services](#)
- [User Management, Authentication, Authorization](#)
- [Application and Services Integration](#)

The consortium could meet several potential IT and applications users. There was good interest from other users, e.g. JRC, although the majority of the participants were not IT specialists. Nevertheless, among others, the security aspects and private and secured Workspaces for data providers have in particular been praised: each data provider is the owner of his/her workspace and manages his/her own file hierarchy. Only the data provider him/her-self can access his/her workspace.

Means to ensure an overview on the resources used (and their costs) have also been judged as primordial when using a cloud-based infrastructure.

Beginning M26 the project could also benefit from feedback from EC experts during the second annual review. Some major conclusions are relevant for this study such as:

- Reliability of the provision of background maps display
- Flexibility of key technical components for adaptation to other cloud platforms
- Need for advanced INSPIRE compliance
- Analysis and investigation towards deployment on a private Cloud infrastructure
- More intensive and collaborative work from the consortium members

Some other demonstrations carried out by the various partners to more limited audiences did not bring significant new usability / QoS considerations with regards to what the consortium had already identified. Since this statement only concerns punctual and time-limited demos, we of course, further continue our efforts in engaging external users for longer periods in these evaluations.

A major event for the project has also been the INSPIRE Conference at Aalborg, Denmark in June 2014 (M29). INGC has been qualified for a workshop where concrete use/utilization of the platform has been demonstrated. Although it did not cover actual long-lasting uses of the platform, feedback from the attendees (heterogeneous panel of IT specialists, scientists, civil-servants and decision-makers) has received careful consideration:

- Praise on the cloud-based, loose-coupled architecture that shall accommodate for high scalability and for potential replacement of some technical components (e.g. future integration of alternative servers such as Geoserver, degree, other type of RDBMS...)
- Praise on availability that shall allow countries with low-IT infrastructures (e.g. developing countries) to benefit from the cloud to enable their data publication and sharing needs.
- Praise on the Linked Open Data facilities that are unique in such an integrated solution.
- Questions about INSPIRE compliance at data model and performance of network services level: how to assess compliance / how to couple test services that are now available with INSPIRE-compliance.

This workshop provided a good opportunity to address a large panel of INSPIRE data users and have them get acquainted with the INGC project. The consortium exposed how the technical interoperability challenges have been faced, and how much the INGC team is involved in innovation processes.

#### **2.4. ACTIVE COMMUNICATION TOWARDS USERS**

The British Geological Survey and the French Ministry of Environment have been kindly offered to give their view on the project.



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The 'Carmen' platform user network has been invited (by personal mail) to use the 'Geopublication' module of InGeoCloudS (since some similar functions exist in both systems, it was a further incentive to get people to try INGC) so they could then give their feeling about INGC, and about the INSPIRE services provided.

The French Water Agency also requested a trial account for their campaign to assess solutions for diffusion of geographical data and processing.

The Joint Research Center welcomed the InGeoCloudS consortium for a one day workshop that has been rich in exchanges about the different activities and plans of both groups (Feb 4<sup>th</sup>, 2014).

The European Environment Agency has been asked for a meeting and a meeting has been held. The consortium hopes to get a positive communication from this institution to get more users.



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### 3. INGEOCLOUDS QUALITY ASSESSMENT

The evaluation of a system is a basic tool to assess its quality. Service evaluation processes have long been inefficient and costly. Each outsourcing organization produced and distributed its own proprietary questionnaire to each of its service providers. Some Service providers train their resources to respond to diverse client information requests. Inconsistencies from questionnaire-to-questionnaire cause impossibility to consolidate assessment.

The international community has implemented several generations of standards in order to bring software security to a higher level. International standards and models have been developed to address security issues for software product quality.

In 2011 ISO issued the updated standard for software product quality ISO/IEC 25010. One important change in ISO 25010 is that Security appeared as one of the main software product quality characteristics.

In order to assess the quality of InGeoCloudS, as mentioned in Chapter 1.3, we have used here the ISO 25010 standard enhanced with an Information Quality chapter. We asked the consortium members to rate and to comment the given referential. A few trial users have also been interviewed and their contributions have been integrated.

InGeoCloudS is built as an integrated platform of loose-coupled applications that are more or less intensively used by each institution. For this reason, the assessment has been done module by module so as to be relevant. The evaluation by IT users is focused on Administration and Data management.

The collected raw results are given (rate from **1-bad to 5-good** and comments), and a consolidated analysis is provided after each section result.

#### 3.1. FUNCTIONALITY

The first chapter of this assessment deals with the functionality. It means the degree to which the product provides functions that meet stated and implied needs when the product is used under specified conditions.

	1.1. Appropriateness	1.2. Accuracy	1.3. Compliance
Functionality	<i>Easiness to get into it</i>	<i>Are the functions precisely as required?</i>	<i>Does it provide the result it is supposed to?</i>
Administration (1 to 5)	4 Web-based tools are provided.no clear link from wiki site to portal	4,7 platform implemented according to user requirements. Some shortcuts in most recurrent administration activities are still needed.	5 platform implemented according to user requirements



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<b>Data management</b>	3,5 Standard SQL can be used to build and manage everybody own's information. lack of GUI / Web-based tool	5 platform implemented according to user requirements. The API for LOD is both comprehensive and accurate according to the needs expressed by DataProviders	4,7 platform implemented according to user requirements. Some minor bugs still present
<b>Shakemaps</b>	5 direct URL available	4 (INSPIRE output is missing)	4 (INSPIRE output is missing)
<b>Geoprocessing in Groundwater resources management in Granular Aquifer &amp; Geohazard (greek UC)</b>	4 Tools are easy to use	5	5
<b>Smart Queries</b>	4 no clear link from wiki site to portal	3 functionality missing – could be enhanced)	3 functionality missing – could be enhanced
<b>Pesticides in Groundwater</b>	4	5	5
<b>Geopublication/Geocat alog</b>	4	4 Everything is functional and INSPIRE compliant (download, view discovery) but the symbology	5
<b>Groundwater resources management in Granular Aquifer</b>	4	5	4 (INSPIRE output is missing)
<b>Susceptibility map</b>	5	5	4 (INSPIRE output is missing)
<b>GeoHazard (Active Landslide Inventory Mapping &amp; Susceptibility zoning)</b>	4	5	4 (INSPIRE output is missing)
	4,15	4,57	4,57

All the functionalities are implemented according to the requirements, except for a few INSPIRE features (e.g; Geopublication symbology). Some Smart Queries issued by the Data Providers also appear not to be extensively used in practice.

The main issue in terms of functionality is ergonomic: the link from Wiki site (www) to the portal is difficult to find, which is unsettling for a trial user.

### 3.2. RELIABILITY

The reliability is the degree to which a system or component performs specified functions under specified conditions for a specified period of time.

	<b>2.1. Availability</b>	<b>2.2. Fault tolerance</b>	<b>2.3. Recoverability</b>	<b>2.4. Compliance</b>
<b>Reliability</b>	<i>Availability of the module in time</i>	<i>Component behaviour when the user makes a mistake (help, correction, nothing, crash...)</i>	<i>After a mistake or a default, how easy we can recover</i>	<i>Compliance with the expected reliability</i>
<b>Administration (1 to 5)</b>	4,5 maintenance actions by cloud provider resulted in minor downtime	4 Some components need further refinement for the automation of some maintenance actions	4,5 Recovery API is provided. Quite an effort is required – no automatic procedure	4
<b>Data management</b>	4,5 maintenance actions by cloud provider resulted in minor downtime	4 Some components need further refinement for the automation of some maintenance actions	4 Recovery API is provided. quite an effort is required – no automatic procedure	4
<b>Shakemaps</b>	4 maintenance actions by cloud provider resulted in minor downtime	5 API function error codes can be used	4 quite an effort is required – no automatic procedure	4
<b>Geoprocessing in Groundwater RMiGA</b>	5 IT IS ALWAYS ON	3	5	5
<b>Smart Queries</b>	4 maintenance actions by cloud provider resulted in minor downtime	4 missing more specific error messages (too general messages)	4 quite an effort is required – no automatic procedure	4
<b>Pesticides in Groundwater</b>	5 the cloud is always 'on'	4	4 A mistake does not take the system down	4 No failure observed while tested
<b>Geopublication/G eocatalog</b>	5 the cloud is always 'on'	3 in case of non-compliance of a data, no reaction comes	4 A default does not break the service	4 No failure observed while tested
<b>Groundwater</b>	5 the cloud is always 'on'	3	4	4 No failure observed while tested
<b>Susceptibility map</b>	5		4	4
<b>GeoHazard</b>	5 the cloud is always 'on'	3	4	4 No failure observed while tested
	4,7	3,66	4,15	4,1



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Also benefiting from an extremely reliable CSP's infrastructure, InGeoCloudS availability is excellent. Recovery and compliance are satisfactory.

A mistake of the user does not mean a failure of the system: the recovery is satisfactory. What we expected initially of InGeoClouds is a highly reliable level. The compliance is also good.

Nevertheless the fault tolerance could be improved. Accurate feedback to the user in case of errors is a must for commercial exploitation of a platform such as InGeoCloudS. At the moment, the platform is missing an integrated error management, diagnosis and analysis that would be capable of interpreting errors/exceptions raised by individual components of the platform. This would deserve more development effort for facilitating exploitation of the platform in operational conditions.

### 3.3. PERFORMANCE

The performance accounts for the amount of resources used under stated conditions.

Performance	3.1. Time-behaviour	3.2. Resource-utilisation Compliance
	<i>With the cloud, the time behaviour should be excellent. Is that true?</i>	<i>Is the scale and ressource allocation compliant with expectations?</i>
<b>Administration (1 to 5)</b>	4,5 Visualization of Maps is sometimes a bit slower than expected.	5
<b>Data management</b>	4,5 Visualization of Maps is sometimes a bit slower than expected. no delays encountered	5
<b>Shakemaps</b>	5 no delays encountered	5 Resources adjusted according to needs / performance requirements are met
<b>Geoprocessing in GRMiGA</b>	4	5
<b>Smart Queries</b>	3 (some delays encountered in query processing)	
<b>Pesticides in Groundwater</b>	5	5
<b>Geopublication/Geocatalog</b>	4	5 advantage of the cloud: the scale is accurately relevant
<b>Groundwater resources management in Granular Aquifer</b>	4	5
<b>Susceptibility map</b>	4	5
<b>GeoHazard</b>	4	5
	4,2	4

The performance indicators are satisfactory thanks to the Cloud. Some reports mention some delay / slowness with background maps display. This kind of issue is not specific to InGeoCloudS as all geographic systems operating on the Web have to deal with corresponding jitter/delay issues when constantly dealing with large amount of data to be uploaded or downloaded. Mapcaching mechanisms improved the situation with regards to last year experience, yet some optimisation could be investigated.

### 3.4. OPERABILITY



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The operability is the degree to which the product has attributes that enable it to be understood, learned, used and attractive to the user, when used under specified conditions

<b>Operability</b>	<b>4.1. Appropriateness recognisability</b>	<b>4.2. Learnability</b>	<b>4.3. Ease of Use</b>	<b>4.4. Helpfulness</b>	<b>4.5. Attractiveness</b>	<b>4.6. Technical accessibility</b>	<b>4.7. Compliance</b>
	<i>Intuitiveness, ability of the functions to be understood</i>	<i>Are the product attributes easy to learn?</i>	<i>Are the product attributes easy to use?</i>	<i>Are the product attributes used?</i>	<i>How attractive to the user is the product?</i>	<i>How high must be the technical level of the user to achieve its goal?</i>	<i>Compliance in operability w.r.to expectations</i>
<b>Administration (1 to 5)</b>	4 Administration is specific to InGeoCloudS platform; therefore some learning effort is required. Yet, documentation is provided.	4	4	5	4,5	3 good expertise and technical skills are required.	4
<b>Data management</b>	5 Meaning and functionalities of methods are well documented, APIs are documented and method signatures are relatively simple and understandable	4,5 RESTful APIs that are easily mastered by integrators	4 Web-based GUI would improve the user experience	4,5 most of them depending on the needs	4,5	3 lack of GUI, good expertise and skills are required.	4
<b>Shakemaps</b>	5	5	5	5	4 lack of a more feature-rich user interface	5 No technical skills are required	
<b>Geoprocessing in GRMiGA</b>	4 APIs are documented and method signatures are relatively simple and understandable	4 RESTful APIs that are easily mastered by integrators	5 for relevant users	5	5 for relevant users	5 the user must have knowledge about the type of data	5
<b>Smart Queries</b>	4 (Front-end is easy and intuitive / Back-end would require more documentation)	4 (Front-end is easy and intuitive / Back-end would require more)	5	5	5	4 (Front-end is easy and intuitive / Back-end requires technical)	5



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		documentatio n)				skills)	
<b>Pesticides in Groundwater</b>	4	3 It can be a little difficult to understand queries involving overlapping depth intervals	4		2 The map projection is of very low quality which compromises the credibility of the system	3 Knowledge of groundwater data and geology is needed	4
<b>Geopublication/Geocatalog</b>	4	4	5	5	3 the ergonomoy could be improved	3 a user may know how to use FTP tool	4 overall operability is fine
<b>Groundwater resources management in Granular Aquifer</b>	4	4	5	5	4	5 the user must have knowledge about the type of data	4
<b>Susceptibility map</b>	5	5	5	5	3 - map projection is not the best - Slovenia is displayed incorrectly	5 Its really easy just hazard map with different colours from green (no danger) to red (great danger)	4 -The viewer does not follow the latest trends
<b>GeoHazard</b>	4	4	5	5	4	5 the user must have knowledge about the type of data	4
	4,3	4,15	4,7	4,94	3,9	4,1	4,2

The technical operability is good.

A more specific point has been reported, but concerning only a few applications: some ergonomic issues have been reported in some of the applications. The design may be improved, but overall the map browsing is looking somewhat outdated comparing with most recent rich internet application GUIs. This last point is an issue for InGeoCloudS in a very competitive context. Therefore the consortium has addressed the issues continuously from the start of Pilot1 to the maintenance of Pilot2 and beyond.

### 3.5. SECURITY



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The security is the degree of protection of information and data so that unauthorized persons or systems cannot read or modify them and authorized persons or systems are not denied access to them.

Security	5.1. Confidentiality	5.2. Integrity	5.3. Non-repudiation	5.4. Accountability	5.5. Authenticity	5.6. Compliance
	<i>The degree the confidentiality of the data is guaranteed (can you access easily the database...)</i>	<i>Degree the native data can be corrupted</i>	<i>degree to which a contract cannot be challenged by a party</i>	<i>The degree the user is aware of his responsibility in the management of its data</i>	<i>The degree to which the native data can lead to a mistake in interpreting the result of display/processing</i>	<i>Compliance in security w.r.to expectations</i>
Administration (1 to 5)	5 standard security policies and tools are exploited. Access to services is secured/HTTPS/SSL. Workspaces guarantee confidentiality	5 standard security policies and tools are exploited. reliable frameworks used for data integrity	4 standard security policies and tools are exploited log files / access records are available	4,5 standard security policies and tools are exploited. reliable frameworks used for data integrity. Authentication and accounting are features of the platform	5 standard security policies and tools are exploited	5 Required security measures are implemented
Data management	5 standard security policies and tools are exploited. Access to services is secured/HTTPS/SSL. Workspaces guarantee confidentiality. Private DP databases/LOD trees.	4 standard security policies and tools are exploited. no data integrity checks during import provided by API / storage frameworks used guarantee data integrity	4 standard security policies and tools are exploited. log files / access records are available	4,5 standard security policies and tools are exploited. Ad-Hoc accountability tools have been developed. user authentication, Private Workspaces, private LOD trees	5 standard security policies and tools are exploited	5 Required security measures are implemented
Shakemaps	5 Data resides in DP's workspace	3 Data integrity is not checked automatically	3 log files / access records are available	5 user authentication, Private Workspaces	3	5 Required security measures are implemented



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						d
Geoprocessing in GRMiGA	5 Data used for Geoprocessing are free	5 Raw data are stayed as such	4	5	5 Data are relevant and can lead to wrong results	5
Smart Queries	N/A	N/A	N/A	N/A		N/A
Pesticides in Groundwater	5 Data is public / not confidential	5		NA	3 Data is not grouped in relation to aquifers	5
Geopublication/ Geocatalog	4 the directory of data is password-protected	5 native data are kept as such	4 the services externally available depend on the data provider only	4 - see above	4	4 - overall security is suited to a GIS
Groundwater resources management in Granular Aquifer	5 Data used are free	5 Raw data are stayed as such	4	5	5 Data are relevant and can lead to wrong results	5
Susceptibility map	5 Data are public/ not confidential	5 - native data cannot be corrupt			3 - the susceptibility model is in validation phase	5
GeoHazard	5 Data used are free	5 Raw data are unaltered	4	5	5	5
	4,94	4,66	3,85	4,5	4,25	4,88

The technical security is compliant with INGC design documents. Authentication is secured at an acceptable up-to-date level in terms of technologies. As most of the data are not confidential, this indicator is a minor concern.

Besides, the native data are saved as such (without prior-processing), minimizing a potential risk of data corruption.

### 3.6. COMPATIBILITY

The compatibility is the degree to which two or more systems or components can exchange information and/or perform their required functions while sharing the same hardware or software environment.



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	6.1. Replaceability	6.2. Co-existence	6.3. Interoperability	6.4. Compliance
<b>Compatibility</b>	<b><i>The degree to which the the ontology can be used in place of another specified ontology for the same purpose in the same environment.</i></b>	<b><i>The degree to which the the ontology can exist along with another in the same environment.</i></b>	<b><i>The degree to which the ontology can be cooperatively operable combining its knowledge with one or more other ontologie</i></b>	<b><i>Compliance in compati bility w.r.to expectat ions</i></b>
Administration (1 to 5)	3,7 standard technologies and methodologies were employed to guarantee modularity and interoperability. Some dependencies from the specific Amazon platform are present but inevitable. Standards-compliant technologies and services are in place (HTTPS/LDAP/RESTful Services...). Nevertheless, some development rely on AWS APIs	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 (standards-compliant technologies and services have been used as required)
Data management	5 standard technologies and methodologies were employed to guarantee modularity and interoperability. data management components are in line with state-of-the-art	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standards-compliant technologies and services have been used as required
Shakemaps	N/A	N/A	N/A	N/A
Geoprocessing in GRMiGA				
Smart Queries	N/A	N/A	N/A	N/A
Pesticides in Groundwater				
Geopublication/Geocatalog	5 the data input and services output use standards	5 each user has his own directory	4 the GC and INSPIRE compliances allow any combination	5 that is the strength of Geopublication and Geocatalogue
Groundwater resources management in				



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Granular Aquifer				
Susceptibility map	5	5	5	5
GeoHazard				
	4,56	5	4,78	5

The compatibility of the system is satisfactory; InGeoCloudS can import a large type of data as inputs, and provides the interoperable service as output (Geopublication). InGeoCloudS is based on standards bricks and offers interoperable services.

Nevertheless the Amazon Cloud base (Amazon Web Services, AWS) makes it dependent on AWS API (indicator 6.1): such dependence could be mitigated if a generic software-based brick were designed to mask completely AWS's API while being flexible enough to cope with other CSPs services.

In order to prevent these dependencies, the consortium has started to create an instance of InGeoCloudS in a dedicated test-bed based on an OpenStack cloud. This proof of concept shows that the use of some AWS services can be replaced with a relatively low effort. This will in particular be documented in a note referenced in Period3 activity report.

### 3.7. MAINTAINABILITY

The maintainability is the degree of effectiveness and efficiency with which the product can be modified.

	7.1. Modularity	7.2. Reusability	7.3. Analyzability	7.4. Changeability	7.5. Modification stability	7.6. Testability	7.7. Compliance
<b>Maintainability</b>	<i>The degree to which the ontology is composed of discrete components such that a change to one component has minimal impact on other components</i>	<i>The degree to which an asset (part of) the ontology can be used in more than one ontology, or in building other assets</i>	<i>The degree to which the ontology can be diagnosed for deficiencies or causes of failures (inconsistencies), or for the parts to be modified to be identified</i>	<i>The degree to which the Ontology enables a specified modification to be implemented. The ease with which the ontology can be modified</i>	<i>The degree to which the ontology can avoid unexpected effects from modifications of the software or knowledge</i>	<i>The degree to which the ontology modified can be validated</i>	<i>Compliance in maintainability w.r.to expectations</i>
Administration (1 to 5)	5 standard technologies and methodologies were employed to guarantee modularity and interoperability. Rest-based services and loose-coupling architecture	5 standard technologies and methodologies were employed to guarantee modularity and interoperability. AWS limits the easiness	5 standard technologies and methodologies were employed to guarantee modularity and interoperability. Specific monitoring	4 standard technologies and methodologies were employed to guarantee modularity and interoperability. Some dependencies on Amazon platform are	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	4



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		for INGC reuse.	tools have been developed.	present			
Data management	5 standard technologies and methodologies were employed to guarantee modularity and interoperability. Rest-based services and loose-coupling architecture	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	4
Shakemaps	1 No modularity	1 Product reused as a whole	3	3	3	3	3 - Fully maintainable, needs expertise
Geoprocessing in GRMiGA	5	4	4	5	5	4	4
Smart Queries	N/A not tested	N/A	N/A	N/A	N/A	N/A	N/A
Pesticides in Groundwater	4	4	4	4	4	4	4
Geopublication/Geocatalog	3 - INGC structure allows a modularity, requiring nevertheless assistance to achieve it	4 - Geocatalogue metadata and Geopublication services can be reused	3 - possible, but needs expertise to achieve	4 - Geocatalogue is standard and the ontology can evolve	2 - possible, but needs human analysis	4 - metadata and standards can be assessed	3 - Fully maintainable, need expertise
Groundwater RMiGA	5	4	4	5	5	4	4
Susceptibility map	3	4	4	4	3	4 - test the wms service	4
GeoHazard	5	4	4	5	5	4	4
	4	3,88	4	4,11	4,11	4,11	3,66

The modularity is not very satisfactory (indicator 7.2). The shakemaps application must be reused as a whole.

The Reusability is moderated by the cloud service provider dependence which is unavoidable. On the other hand, dependence on some AWS service is not an issue but rather a solution providing a best quality/price ratio.

Nevertheless, a proof of concept of portability to a widely-used open source cloud management system (OpenStack) is being implemented in lab to in order to assess how much effort -would be necessary to relax Amazon dependencies (see 3.6).

The maintainability is a major challenge for a commercial product. Here, an expertise is required to achieve a satisfactory maintenance.



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#### 3.8. TRANSFERABILITY

The transferability is the degree to which a system or component can be effectively and efficiently transferred from one hardware, software or other operational or usage environment to another.

	<b>8.1. Portability</b>	<b>8.2. Adaptability</b>	<b>8.3. Installability</b>	<b>8.4. Compliance</b>
<b>Transferability</b>	<i>The ease with which a ontology or one part of the ontology can be transferred from one hardware or software environment to another</i>	<i>The degree to which the the ontology can be adapted for different specified environments without applying actions or means other than those provided for this purpose for the ontology considered</i>	<i>The ease with which a ontology or one part of the ontology can be installed from scratch</i>	<i>Compliance in transfer ability w.r.to expectations</i>
<b>Administration (1 to 5)</b>	3,7 standard technologies and methodologies were employed to guarantee modularity and interoperability. Some dependencies on Amazon platform are present. Some parts relying on AWS are not immediately portable	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5
<b>Data management</b>	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5 standard technologies and methodologies were employed to guarantee modularity and interoperability	5
<b>Shakemaps</b>	5 fully portable to all software/hardware platforms	4 adaptation possible / some minor modifications might be needed	4 relatively easy / technical skills required	5
<b>Geoprocessing in GRMiGA</b>	5	5	4	4
<b>Smart Queries</b>	N/A	N/A	N/A	N/A
<b>Pesticides in Groundwater</b>	4	4	4	4
<b>Geopublication/Geocatalog</b>	4 - Moving Geopublication/Geocatalogue is easy. Moving the authentication module is	4 - see above	4 - see above	4



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	more complicated			
<b>Groundwater resources management in Granular Aquifer</b>	5	5	4	4
<b>Susceptibility map</b>	4	4	4	4
<b>GeoHazard</b>	5	5	4	4
	4,52	4,55	4,22	4,33

The above assessment shows that there is no technical challenge to achieve potential transfer but it would take expertise and resources to be achieved (see also consideration of using some other cloud management platforms made in previous sections).

### 3.9. INFORMATION QUALITY

This chapter assesses a set of attributes that bear on the existence of a set of functions and their specified properties. The functions are those that satisfy stated or implied needs

	9.1. Accuracy	9.2. Suitability	9.3. Accessibility	9.4. Legal compliance
<b>Inf. Quality</b>	<i>Degree of accuracy of information</i>	<i>Degree of suitability of information</i>	<i>Degree of accessibility of information</i>	<i>The degree to which a wrong information can result in legal issues</i>
Administration (1 to 5)	4 Dedicated information for different types of users is provided; Processes for updates are set but some enhancements still possible.	4,5 information suitable for its purpose	4 information easy to find through wiki and portal	No legal issues
Data management	4 Dedicated information for different types of users are provided; Processes for updates are set but some enhancements still possible.	4,5 information suitable for its purpose	4 information easy to find through wiki and portal	No legal issues
Shakemaps	4 processes for updates need to be set up	5 information suitable for its purpose	4 information easy to find through wiki and portal	5 No legal issues detected.
Geoprocessing in GRMiGA	4	4 Data are suitable for each UC & application	4 Data can easily downloadable as xls sheets	5 No legal issues detected.



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Smart Queries	5	3 more examples of use would be usefull	4 information easy to find through wiki and portal	N/A
Pesticides in Groundwater				
Geopublication/Geocatalog	5 - the WIKI provides all information	5 - the WIKI provides all information	5 - the WIKI provides all information	4 - We assume the user knows the projection system his data belongs to
Groundwater resources management in Granular Aquifer	4 Data are accurate because they are gathered using standard procedures. Also chemical analyses are done by certified laboratories	4 Data are suitable for each UC & application	4 Data can easily downloadable as xls sheets	5 No legal issues detected.
Susceptibility map	5 - the WIKI provides all information	5 - the WIKI provides all information	5 - the WIKI provides all information	
GeoHazard (Active Landslide Inventory Mapping & Susceptibility zoning)	4 Data are accurate because they are gathered using standard procedures. Also chemical analyses are done by certified laboratories	4 Data are suitable for each UC & application	4 Data can easily downloadable as xls sheets	5 No legal issues detected.
	4,33	4,33	4,22	4,8

The information quality is a strong positive point. The wiki site cross-connected to INGC, as well as the portal help, give users a strong support. Data quality from a scientific viewpoint is achieved through the DP applications and their time-tested data management procedures.



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#### 4. INGEOCLOUDS QUALITY IN USE ASSESSMENT

In order to assess the quality in Use of InGeoCloudS, we have used the ISO 9126 standard which is dedicated to the Quality in Use of a software product.(while ISO25010 is dedicated to the system assessment, not “in use”).

The main issue to perform this assessment is the lack of users, although the Pilot2 has been in use for 6 months now. This is the reason why many indicators have not been assessed. We asked the consortium members to rate and to comment the given referential. Few potential users accepted to use InGeoCloudS as a trial. Two of them were interviewed by phone and their contributions have been integrated.

The evaluation by IT users is focused on Administration and Data management.

##### 4.1. USABILITY

The Usability is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

Usability	1.1. Effectiveness in Use	1.2. Efficiency in Use	1.3. Satisfaction in Use	1.4. Usability in use compliance	1.5. Learnability in use	1.6. Actual usability	1.7. Actual user experience
	<i>The accuracy and completeness with which users achieve specified goals</i>	<i>The resources expended in relation to the accuracy and completeness with which users achieve goals</i>	<i>The degree to which users are satisfied with the experience of using a product in a specified context of use</i>	<i>How compliant is the use with respect to the expected usability</i>	<i>degree to which specified users can learn efficiently and effectively while achieving specified goals in a specified context of use</i>	<i>degree to which specified users can achieve specified goals with effectiveness in use, efficiency in use, learnability in use, and accessibility in use in a specified context of use. Note: Actual usability is measured and evaluated in a real operational environment where real users perform actual specified tasks</i>	<i>degree to which specified users can achieve actual usability, safety, and satisfaction in use in a specified context of use. Note: Actual UX is evaluated not only by measures and indicators of user performance – as in actual usability-, but also by means of satisfaction instruments</i>
Administration (0 to 5)	4	4 medium effort required to achieve goal	4	4	4	4	4



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Data management	5	4 medium effort required to achieve goal	5	5	4	4	4
Shakemaps	5	5 minor effort required to achieve goal	4	3 more features would be desirable	5	5	4
Geoprocessing in GRMiG A	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude
Smart Queries	4 back-end requires more rich filtering options	4 minor effort required at front-end, medium effort at back-end	3 some problems encountered during application use	3	4	4	3
Ground water	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude
Geopublication	N/A to few users to conclude	N/A to few users to conclude	N/A to few users to conclude	N/A to few users to conclude	N/A to few users to conclude	N/A to few users to conclude	N/A to few users to conclude
Ground water resources management in Granular Aquifer	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude
Susceptibility map	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude
GeoHazard	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude	N/A too few users to conclude
	4,5	4,25	4	3,75	4,25	4,25	3,75

The lack of feedbacks does not allow general conclusions about the usability in use of InGeoCloudS. The feedback obtained on SmartQueries utilities is quite satisfactory while some efforts could be necessary for improving back-end side (authoring tools).



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#### 4.2. FLEXIBILITY

The flexibility is a set of attributes that bear on the existence of a set of functions and their specified properties. The functions are those that satisfy stated or implied needs.

Flexibility	2.1. Context conformity in use	2.2. Context extendibility in use	2.3. Accessibility in use	2.4. Flexibility in Use compliance
	<i>The degree to which usability in use meets requirements in all the intended contexts of use</i>	<i>The degree of usability in use in contexts beyond those initially intended</i>	<i>Is practically the system accessible in use?</i>	<i>Is the system flexible in use?</i>
Administration (0 to 5)	N/A Product cannot be used in another context	N/A Product cannot be used in another context	5	5
Data management	N/A	N/A	N/A	N/A
Shakemaps	N/A Product cannot be used in another context	N/A Product cannot be used in another context	1 Not accessible by disabled persons	N/A
Geoprocessing in Groundwater resources management in Granular Aquifer & Geohazard (greek UC)	N/A too few users to conclude	N/A too few users to conclude	5 - thanks to the cloud, the usage is always possible	N/A too few users to conclude
Smart Queries	N/A	N/A	N/A	N/A
Groundwater	N/A too few users to conclude	N/A too few users to conclude	5 - thanks to the cloud, the usage is always possible	N/A too few users to conclude
Geopublication	N/A too few users to conclude	N/A too few users to conclude	5 - thanks to the cloud, the usage is always possible	N/A too few users to conclude
Groundwater resources management in Granular Aquifer	N/A too few users to conclude	N/A too few users to conclude	5 - thanks to the cloud, the usage is always possible	N/A too few users to conclude
Susceptibility map	N/A too few users to conclude	N/A too few users to conclude	5 - thanks to the cloud, the usage is always possible	N/A too few users to conclude
GeoHazard (Active Landslide Inventory Mapping & Susceptibility zoning)	N/A too few users to conclude	N/A too few users to conclude	5 - thanks to the cloud, the usage is always possible	N/A too few users to conclude
			4,5	5



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The results collected do not allow to make further conclusions about the flexibility in use than what has already been observed in chapter 3 about the system flexibility.

#### 4.3. SAFETY

The degree to which a product or system does not, under specified conditions, lead to a state in which human life, health, property, or the environment is endangered.

	<b>3.1. Operator health and safety</b>	<b>3.2. Public health and safety</b>	<b>3.3. Environmental harm in use</b>	<b>3.4. Commercial damage in use</b>	<b>3.5. Safety compliance</b>
	<i>May the system harm the operator?</i>	<i>May the system harm the public?</i>	<i>May the system harm the environment?</i>	<i>May the system harm property?</i>	<i>Does the safety meet expectation ?</i>
<b>Administration (0 to 5)</b>	5	5 (No the platform overall serves the cause of public safety)	5 (No environmental harm can be documented. The use of the cloud enhances the environmental issues and minimizes energy footprint)	4 ( perhaps it may affect property values if misused)	5
<b>Data management</b>	N/A	N/A	N/A	N/A	N/A
<b>Shakemaps</b>	5	5	5	5	5
<b>Geoprocessing in GRMiGA</b>	5 - No risk	5 - No risk	5 - No risk	4 In case of misinterpretation	5
<b>Smart Queries</b>	N/A	N/A	N/A	N/A	N/A
<b>Groundwater</b>	5 - No risk	5 - No risk	5 - No risk	4 In case of misinterpretation	5
<b>Geopublication</b>	5 - No risk	5 - No risk	4 - depending on the use	4 - depending on the use	5 - No risk
<b>Groundwater RMiGA</b>	5 - No risk	5 - No risk	5 - No risk	4 In case of misinterpretation	5
<b>Susceptibility map</b>	5 - No risk	3	3	3	5 - No risk
<b>GeoHazard</b>	5 - No risk	5 - No risk	5 - No risk	4 In case of misinterpretation	5
	5	4,75	4,57	4	5

The results collected do not allow making further conclusions about the safety in use than what has already been observed in chapter 3 about the system safety.



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## 5. **USERS FEEDBACK**

In order to assess users' needs and practices, the consortium designed a specific questionnaire. The questionnaire is firstly addressed to consortium partners as they are direct users of the platform.

We also launched an online survey by sending a variant of this questionnaire (slightly revised) to as many as possible potential end-users through the list of participants to our workshops, lists of personal contacts acquired during each partner's professional life.

As such, the CRM base constituted entails more than 950 contacts; beside the mailings to incite people to answer the surveys, they incidentally also received InGeoCloudS Newsletters.

Questions are mainly addressing the following topics:

- the criteria of the quality of Service (QoS) such as availability, performance, security and documentation
- the usability of the platform (smart queries, sitools (portal), api, wiki, mantis bug tracker, documentation and the use cases of the Pilot2)
- Support / maintenance of the deployment of services and bug tracking.
- The usefulness of the Web Portal, the wiki and the smart queries.

Unfortunately, and despite the consortium efforts to get the questionnaire filled out by our potential users, the feedbacks are not numerous enough to make out a consolidated assessment from it: we only received 7 exploitable answers from the Consortium. This chapter gives the results as it is.

### 5.1. **USERS SURVEY FEEDBACK**

Only 7 actors answered the User survey. All of them knew INGC through working connections. They used it for the Application functionality. Only one used INGC with reference to the Cloud criteria.

The relevant answers are as follows.

1. Looking at the following list of InGeoCloudS services, how would you rate your satisfaction with each item you have used?

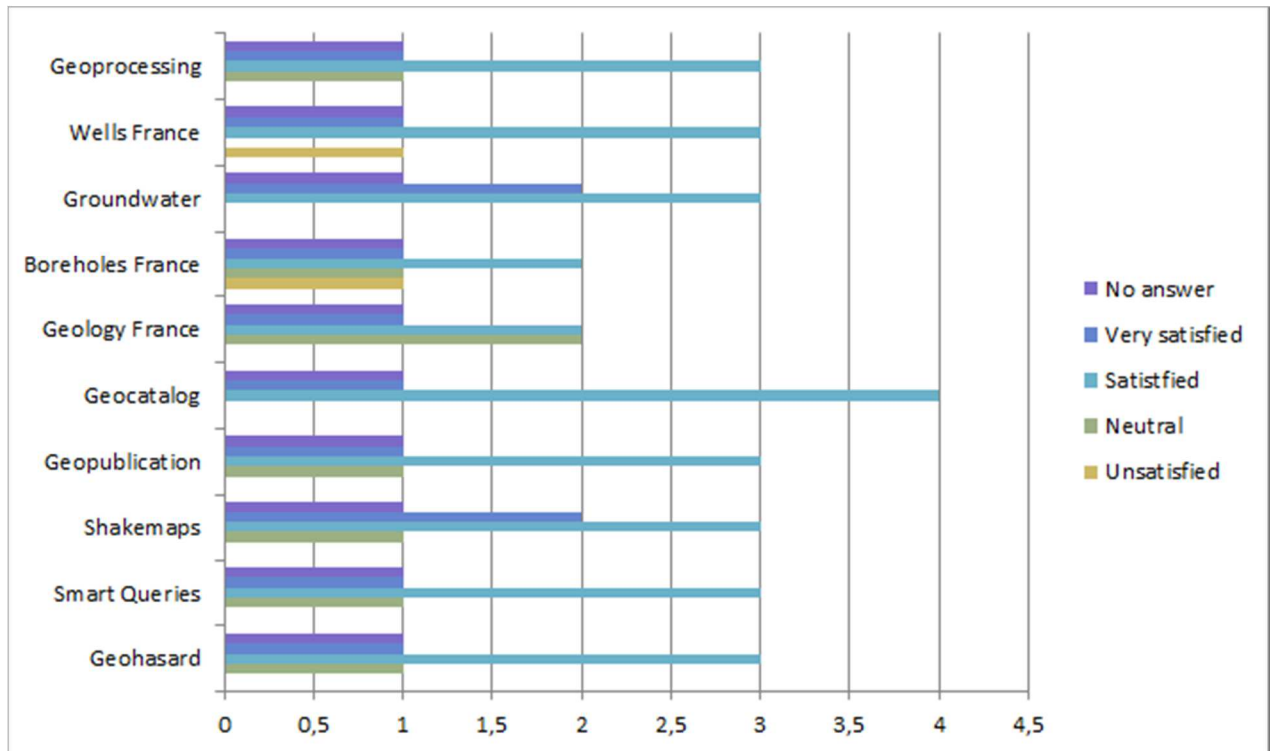


Figure 1: satisfaction rating

From this feedback we can conclude that the features are globally giving satisfaction, in particular, the thematic application groundwater and the INSPIRE brick Geotcatalogue which only received positive feedbacks.

- Considering the speed for uploading and downloading data, how would you rate InGeoCloudS performance?

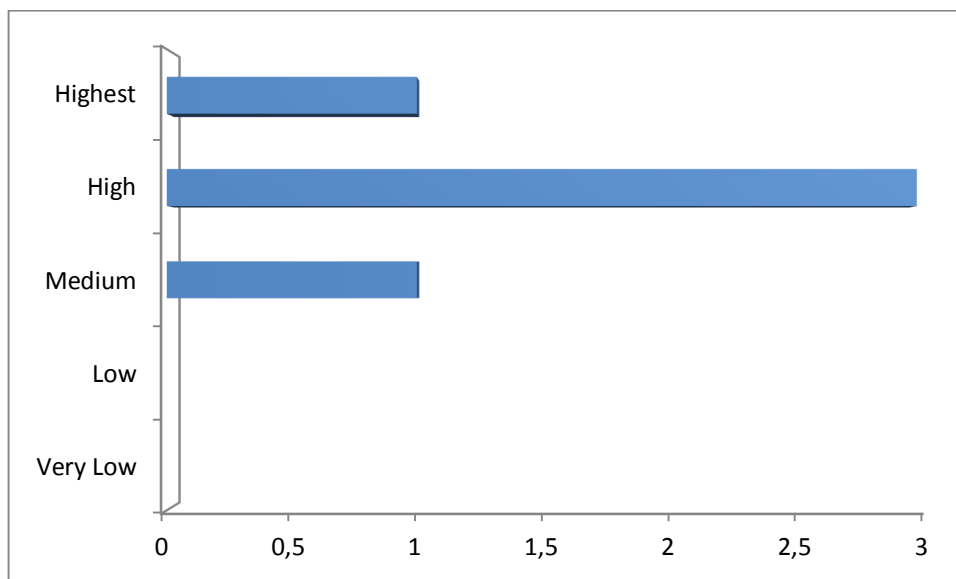
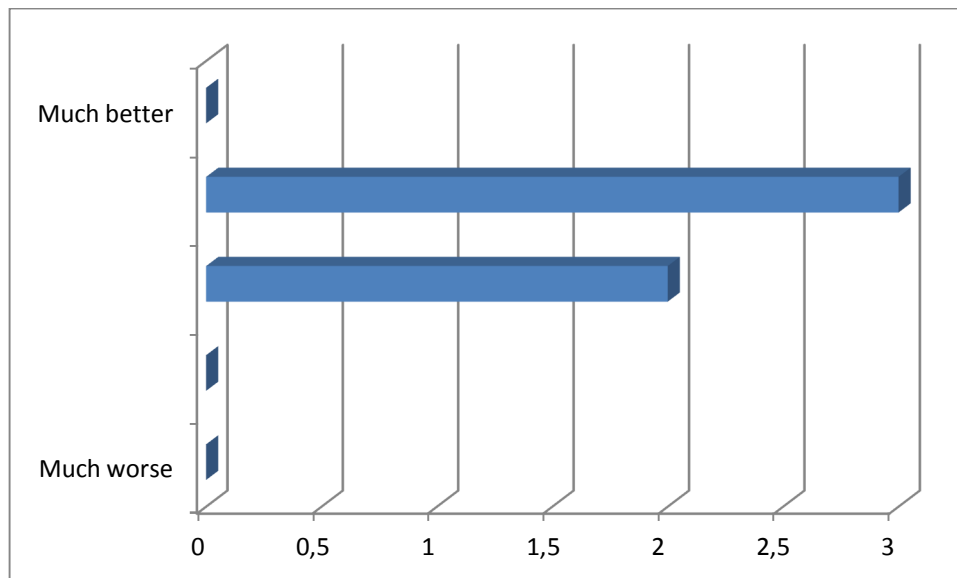


Figure 2: performance

The technical performance of the platform is appreciated.

3. If you are familiar with other similar platforms, how would you rate InGeoCloudS compared to them?



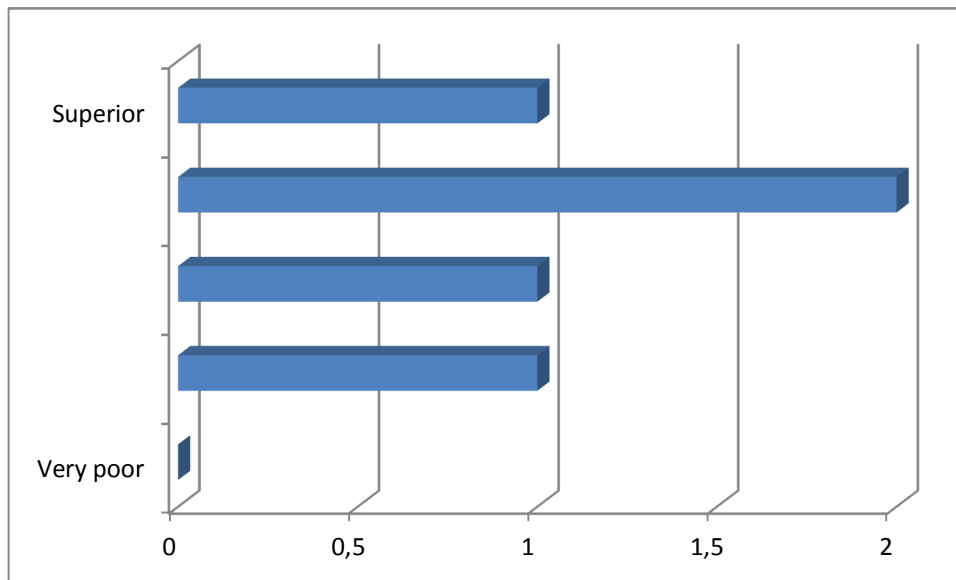
*Figure 3: System comparison*

The application features are comparable to the other market products. From the 2 following comments we can guess one issue is the lack of interconnection between the modules:

*"Compared to One Geology Europe, I can leave my data online and get it in a different session. That is not possible with OneGeology Europe."*

*"the various modules are not very comprehensive. Ergonomy is not very good and not user friendly for people who are not common users of this type of platform. However it seems that the technical features are rather powerful."*

4. How would you rate InGeoCloudS documentation (Wiki, FAQs, Tutorials...)



*Figure 4: documentation*

A strong focus has been put on the documentation. According to the answers, the documentation system suits the need of the users.

5. What is the main reason why you are using InGeoCloudS; What is the main strength; How are you satisfied?

Only 2 answers were provided to these 3 fundamental questions. The main reasons given are : "the use of the Applications", and "the evaluation" purpose. The main strength put forward are "to publish GIS easily", and the use of a "large availability". 2 users say they will keep on using INGC.

There was only one answer about the satisfaction.

6. Conclusion

The survey sections 1 to 4 demonstrate that the system and the help are acceptable, and even satisfactory for some features. Nevertheless the question 5 clearly shows that the consortium has yet to make effort in answering potential customers needs.

**5.2. PERSONAL FEEDBACKS**

Since the number of users was very disappointing, all the users who had asked for a user account B. D. (MEDDE), R. T. (Water Agency), BGS , P. L. (Parc Oise), L. B. (Onema), have been personally contacted.

Except RT who actually answered the questionnaire, the other users either did not go ahead in the evaluation or did not answer the questionnaire due to a lack of time and a lack of interest in the project. The conclusion that can be drawn from the user's feedback is again that the platform is working fine but that we have not been able to identify a market nor to focus on a service suited for the designated users, due to a lack of foresight and experience.

## 6. INGEOCLOUDS INFRASTRUCTURE OUTCOME

The usage of both Pilot1 and Pilot2 by IT teams and by geoscience users during their phases of development and of production revealed several usability issues and perceived QoS issues over the last year. They have been systematically registered in various forms in meeting minutes, in bug tracker tool and addressed by the InGeoCloudS infrastructure development and configuration tasks.

While Pilot2 has been deployed and open to be used by other institutions for 8 months now, we have not yet been able to get additional regular users. Although users' feedbacks are not numerous enough to evidence clear conclusions on the use, the system assessment (chapter 3) still allows us to conclude about the system evaluation.

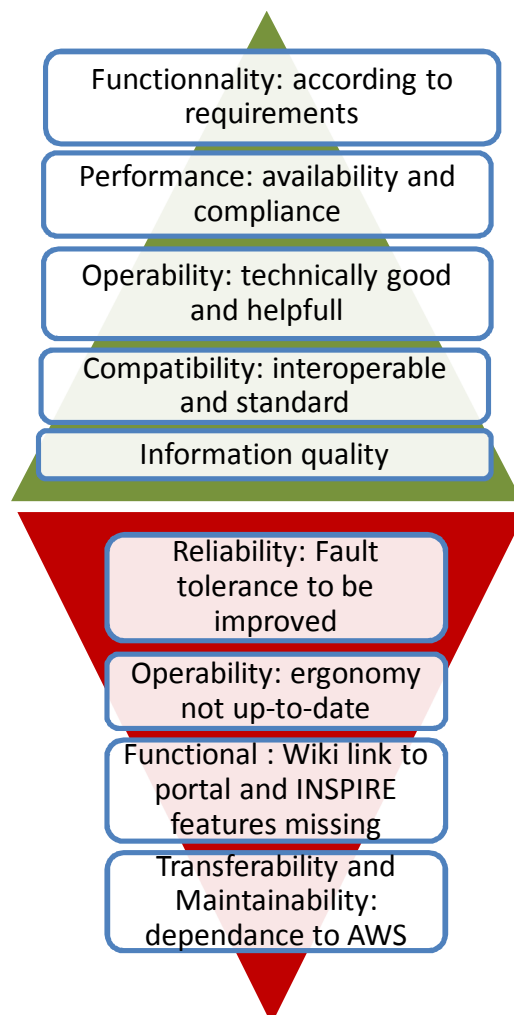


Figure 5: InGeoCloudS evaluation outcome

InGeoClouds fulfills the requirements: the functions are as initially specified, data and services integration is achieved. INGC takes advantage of the Cloud: performance and technical operability are remarkable. Also, the strong investment of the consortium in the documentation is appreciated.



## *Deliverable D5.2.2*

### InGeoCLOUDS indicators : Usability & QoS for end-users and IT users

Ref. : D5.2.2-INGC  
Version : 1.0  
Status : Approved  
Date : 2014-07-09  
Contract : CIP-297300

Some concerns are also to be noted: the applications are not tolerant to user's fault, and the ergonomics could be more up-to-date.

About the documents: the link from Wiki link to the portal is not easy to find.

These three concerns could become major issues for potential users and should be addressed in the future of the project.

The consortium has continuously addressed all issues and kept on improving the service.(see Deliverable D3.1.3.)

Technically, the dependence on Amazon Web Services does not prevent an "easy" and quick transfer to another Cloud Service Provider. The consortium is working on a proof of concept on a lab-based private cloud sample based on the OpenStack platform. The objective is to - show that InGeoCloudS is not locked to Amazon and to give the consortium a more informed view on the procedure to implement and migrate to another cloud if new business opportunities would require it.



# Deliverable D5.2.2

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### APPENDIX – SURVEY TOWARDS INGEOCLOUDS USERS AND IT USERS

InGeoClouds Users feedback – Your opinion counts!

#### 1. How did you get to know InGeoClouds platform?

- Professional sphere
- Friend
- Internet browsing
- Communication action
- Others:.....

#### 2. Which context do you use InGeoCloudS platform in ??

- Professional
- Personal

#### 3. What is the main reason why you chose the InGeoCloudS platform?

- Functionalities (I need one of the applications included)
- Cloud processing (powerful, keeps my data, can get it anywhere...)
- Both
- Other reasons: .....

#### 4. Here follows a list of InGeoCloudS product and service items. Could you rate your satisfaction for each item?

Very Unsatisfied, Unsatisfied, Neutral, Satisfied, Very Satisfied, Not Applicable

- GeoHazard .....
- Smart Queries .....
- Shake maps .....
- Geopublication .....
- Geocatalog .....
- GeologyFrance .....
- BoreholesFrance.....
- GroundWater .....
- WellsFrance .....
- GeoProcessing .....
- Others : .....

#### 5. Considering the speed for uploading and downloading data. Would sayInGeoCloudS's performance is ?:

- Very Poor (1)
- Somewhat Unsatisfactory (2)
- About Average (3)
- Very Satisfactory (4)
- Superior (5)

#### 6. How long have you been using the InGeoCloudS?

- Less than 1 month



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- 1 to 3 months
- Never used

### **7. How often do you use the InGeoCloudS platform?**

- Once a week or more
- 2 to 3 times a month
- Once a month
- Every 2 or 3 months
- Less often
- Do not use

### **8. Compared to other/similar available platforms , would you say that the InGeoCloudS is?**

- Much better
- Somewhat better
- About the same
- Somewhat worse
- Much worse
- Don't know or never used

If a comparable platform is better from your point of view, please give some reasons:.....

### **9. Will you use the InGeoCloudS platform again?**

- Definitely will
- Probably will
- Might or might not/ maybe
- Probably will not
- Definitely will not
- Never used

### **10. Overall, how satisfied are you with the InGeoCloudS platform?**

- Very Unsatisfied
- Unsatisfied
- Somewhat Satisfied
- Very Satisfied
- Extremely Satisfied

### **11. How likely are you to recommend the InGeoCloudS to others?**

- Definitely will recommend
- Probably will recommend
- Not sure
- Probably will not recommend
- Definitely will not recommend
- Never Used



*Deliverable D5.2.2*  
InGeoCLOUDS indicators : Usability &  
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**12. Would you please take a few minutes to explain why you are not satisfied with the product?**

**13. What is your opinion on the documentation about InGeoCloudS (wiki, FAQ, tutorials...):**

- Very Poor (1)
- Somewhat Unsatisfactory (2)
- About Average (3)
- Very Satisfactory (4)
- Superior (5)

**14. If you previously indicated that the customer service was unsatisfactory, could you please describe what happened?**

**15. If you would like us to contact you, please enter your contact information below.**

Name:

Email:

Profession:



# Deliverable D5.2.2

## InGeoCLOUDS indicators : Usability & QoS for end-users and IT users

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### InGeoClouds IT Users feedback – Your opinion counts!

#### 1. How did you get to know InGeoClouds?

- Professional sphere
- Friend
- Internet browsing
- Communication action
- Others:.....

#### 2 In which context do you use InGeoCloudS platform??

- Professional
- Personal

#### 3. For what reason do you choose/use InGeoCloudS platform? (several answers possible)

- Functionalities (I need one of the applications included)
- Cloud processing (powerful, keeps my data, can get it anywhere...)
- Price
- Other reasons: .....

#### 4. Do you have previous experience using the Cloud?

- Yes. Please give some details here: .....
- No

#### 5. What , in your opinion, are the strengths of InGeoCloudS platform?

- Publish GIS easily
- Strong processing power
- Large availability of the data
- Other: .....

#### 6. How long have you been using the InGeoCloudS platform?

- Less than 1 month
- 1 to 3 months
- Never used

#### 7. How often do you use the InGeoCloudS platform?

- Once a week or more often
- 2 to 3 times a month
- Once a month
- Every 2 or 3 months
- Less often
- Do not use

#### 8. Compared to your existing Infrastructure platforms, would you say that InGeoCloudS is?

- Much better
- Somewhat better
- About the same
- Somewhat worse



## *Deliverable D5.2.2*

### InGeoCLOUDS indicators : Usability & QoS for end-users and IT users

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- Much worse
- Don't know or never used

If from your point of view a comparable platform is better, please give reasons :

.....

#### **9. How did you find the monitoring?**

- Very good
- Good
- Medium
- Bad
- Extremely Bad

#### **10. What is your feedback about the use of specific capabilities (schema mapping, use of Gluster FS...)?**

- Very Unsatisfied
- Unsatisfied
- Somewhat Satisfied
- Very Satisfied
- Extremely Satisfied

#### **11. What is your opinion on InGeoCloudS security?**

- Very Unsatisfied
- Unsatisfied
- Somewhat Satisfied
- Very Satisfied
- Extremely Satisfied

#### **12. Would you please take a few minutes to explain why you are satisfied/not satisfied with the product?**

#### **13. What is your opinion on the documentation about InGeoCloudS (wiki, FAQ, tutorials...) :**

- Very Poor (1)
- Somewhat Unsatisfactory (2)
- About Average (3)
- Very Satisfactory (4)
- Superior (5)

#### **14. If you tried to add services to InGeoClouds, what is your opinion about it?**

- Very Unsatisfied
- Unsatisfied
- Somewhat Satisfied
- Very Satisfied



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- Extremely Satisfied

**15. If you would like us to contact you, please enter your contact information below.**

Name:

Email:

Profession:

*\*\*\* End of the document \*\*\**