



**Title:** SLA-Ready Hub and Social Marketplace - final iteration

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## Executive Overview

SLA-Ready is a European initiative driving a common understanding of service level agreements for cloud services with greater standardisation and transparency so firms can make an informed decision on what services to use, what to expect and what to trust. SLA-Ready aims to fill a significant market gap by offering a digital marketplace on Cloud and SLAs for small firms, which is currently lacking in the landscape. The marketplace will provide small firms with much-needed practical guides and tools so they can carefully plan their journey based on an informed, stepping-stone approach, so the Cloud and applications grow with their business.

SLA-Ready plays a timely and critical usability role through its advocacy of reference SLA and best practice repositories. Ultimately, SLA-Ready will help build confidence and trust in the European Cloud market as the very foundation of business.

The SLA-Ready **Common Reference Model** (D2.3, May 2016 and D2.4, December 2016) will benefit the industry by integrating a set of SLA components, such as common vocabularies, SLO metrics and measurements, as well as best practices and relevant standards needed to fill the gaps identified in the current SLA landscape.

Under **WP4 - Communications, Impact and Exploitation**, SLA-Ready supports small businesses (SMEs) with practical guides, encouraging them to carefully plan their journey to the cloud and make it strategic through an informed, stepwise approach, so the cloud and applications can grow with their business.

The previous **D4.2 SLA-Ready Hub and Social Market Place – 1<sup>st</sup> iteration** described the design and rollout phases for the **SLA Marketplace**, tailored content creation, foreseen tools and services, as well as sustainability through integration into the CSA STAR (Security Trust and Assurance Registry) and CloudWatchHUB.

This **D4.3 SLA-Ready Hub and Social Marketplace - final iteration** is an incremental report focusing on describing the evolution of the SLA-Ready Hub and SLA Marketplace, where the final version of the tools and services have been integrated. We refer in particular to the SLA Aid, collection of use cases and the SLA Repository.

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## Glossary

<b>Cloud Service Provider Data</b>	Class of data objects, specific to the operation of the cloud service, under the control of the cloud service provider. Cloud service provider data includes but is not limited to resource configuration and utilization information, cloud service specific virtual machine, storage and network resource allocations, overall data centre configuration and utilization, physical and virtual resource failure rates, operational costs and so on
<b>Common Reference Model (CRM)</b>	Criteria developed by SLA-Ready to support European SMEs in their understanding/uptake of the basic elements that should be contained in a cloud SLA. The CRM is one of the major outputs contributed by SLA Ready.
<b>Data controller</b>	The natural or legal person, public authority, agency or any other body which alone or jointly with others determines the purposes and means of the processing of personal data
<b>Data Integrity</b>	The property of protecting the accuracy and completeness of assets
<b>Data Intervenable</b>	The capability of a cloud service provider to support the cloud service customer in facilitating exercise of data subjects' rights. Note: Data subjects' rights include without limitation access, rectification, erasure of the data subjects' personal data. They also include the objection to processing of the personal data when it is not carried out in compliance with the applicable legal requirements
<b>Data processor</b>	A natural or legal person, public authority, agency or any other body which processes Personal data on behalf of the Data controller
<b>Data protection</b>	The employment of technical, organisational and legal measures in order to achieve the goals of data security (confidentiality, integrity and availability), transparency, intervenability and portability, as well as compliance with the relevant legal framework
<b>Data Subject</b>	An identified or identifiable natural person, being an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity
<b>Disaster recovery</b>	Ability of the ICT elements of an organization to support its critical business functions to an acceptable level within a predetermined period of time following a disruption
<b>Failure notification policy</b>	Specifies the process by which cloud service customers can notify the cloud service provider that a service outage has been observed, the process by which the cloud service provider notifies cloud service customers that a service outage has occurred, the process for providing updates on service outages, who receives notifications and updates, the maximum time between the detection of a service outage and the issuance of a notice of service outage, the maximum time interval between service outage updates and how service outage updates are described
<b>Identity Assurance</b>	The ability of a relying party to determine, with some level of certainty, that a claim to a particular identity made by some entity can be trusted to actually be the claimant's true, accurate and correct identity
<b>(Master) Cloud services agreement (MSA)</b>	A legal document is the overarching part relating to the Cloud service, which describes the terms agreed between the provider and the customer under which the cloud service is made available and used. The MSA has a number of synonyms such as "Customer Agreement", "Terms of Service" or simply "Agreement". The MSA references a number of subsidiary parts, such as the Cloud SLA, Security and Privacy Policies, the Acceptable User Policy, the Business Continuity Policy and the Service Description.
<b>Metric</b>	A standard of measurement that defines the conditions and the rules for performing the measurement and for understanding the results of a measurement
<b>Personal Data</b>	Any information relating to an identified or identifiable natural person ('data subject'); an identifiable person is one who can be identified, directly or indirectly, in

	particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity
<b>Personally Identifiable Information (PII)</b>	Documented agreement between the service provider and customer that identifies services and service level objectives
<b>Remedy</b>	Compensation available to the cloud service customer in the event the cloud service provider fails to meet a specified service level objective
<b>Resilience</b>	Ability of a cloud service to recover operational condition quickly after a fault occurs
<b>Service Level Agreement (SLA)</b>	Documented agreement between the service provider and customer that identifies services and service level objectives
<b>Service Level Objective (SLO)</b>	A specific, measurable characteristic of a cloud service for which the cloud service provider makes a commitment
<b>SLA Aid</b>	Publicly available service developed by SLA Ready and made available on the project's website, which provides SMEs with customized checklist and roadmaps based on the contributed CRM.
<b>SLA-Readiness Index</b>	A quantitative metric that can be used to compare the CSPs contained in the SLA Repository
<b>SLA Repository</b>	A publicly available collection of CSP SLAs analysed based on the CRM criteria developed by SLA-Ready. Collected information was provided directly by interested CSPs.
<b>Vulnerability</b>	A weakness of an asset or group of assets, e.g. software or hardware related, that can be exploited by one or more threats

## Document information

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<b>Total number of pages</b>	27

## Disclaimer

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## 1 Introduction

SLA-Ready aims to provide European SMEs with a set of guides and services to fully benefit from service level agreements (SLAs). SLA-Ready supports the creation of SLAs that match the specific and evidence-based needs of the private sector in Europe. Meeting these needs is key to overcoming the different barriers to the uptake of cloud services, whether that be lack of knowledge or a lack of understanding of cloud contracts/SLAs.

This report is an incremental update of the content presented in D4.2. In this document we highlight how in Y2, WP4 has implemented content from key deliverables deriving from WP2 and WP3 into website content and guides and tools tailored for our specific stakeholders. Our main stakeholders include:

- Cloud Service Customers and re-sellers, including SMEs and large enterprises
- Cloud Service Providers, including SMEs and large enterprises
- Current or potential implementers of standards: these include Cloud Service Providers and Procurement officers (classed as customers)

### 1.1 Cloud Customers, including re-sellers

#### 1.1.1 Small Businesses: Start-ups and SMEs

The importance of small businesses to the European economy is well-known<sup>1</sup>. The main target group of SLA-Ready are those many SMEs that (1) do not yet have a sufficient understanding of cloud services and realise the benefits of the cloud and (2) all SMEs that are typically offered “off-the-shelf” contracts with little to no power to negotiate terms and conditions. Lack of knowledge and low acceptance of the typical CSP SLA “take-it-or-leave it” approach clearly represent major barriers for small businesses. Another issue is the inability to find practical guides and insider tips all in one place. Information on both these issues is dispersed across many different websites and documents, and, in the case of SLAs typically targets large organisations, especially CIOs.

To create clear a path towards cloud uptake, SLA-Ready has incrementally roll out an **SLA Marketplace** offering a stepwise practical, hands-on guide and insider tips to help lower the entry barrier from the very outset.

A key feature of the marketplace is therefore to support the most typical approach that small businesses take in their journey to the cloud, drawing on feedback from SMEs and

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<sup>1</sup> See, for example, a recent article on the importance of SMEs to the UK economy: <http://contractsit.com/small-companies-make-a-big-difference/>.



their representative organisations. Our aim is to assist small businesses in selecting a cloud service, give them a better indication of what to expect when using it and greater awareness of issues such as security and privacy.

SLA-Ready is well placed to empower small businesses by offering vital insights into how to deal with all aspects related to the SLA and SLOs, the contractual clauses, and coverage (or lack of it) on security, privacy, data management and data protection.

### 1.1.2 Large Companies

SLA-Ready mainly targets large companies that have concerns, perceived or real, about security and privacy, including regulated industries. ENISA highlights the need to raise much greater awareness of security benefits of the cloud, assist companies in making risk assessments, and help bridge the gap between the supply and demand sides (as well as regulators, where relevant).

## 1.2 Cloud Service Providers

The SLA-Ready state-of-art analysis (D2.2) has been vital in revealing the current practices of cloud service providers with regard to service level agreements, and more generally cloud contracts. This is also an opportunity to clarify the services in terms of security and privacy, SLA aspects and life cycle.

Placing attention on major concerns and requirements on the customer side is an opportunity for cloud service providers to strengthen their service offers to enable more companies to start or advance their journey to the cloud. SLA-Ready also highlights the need for standardised SLA metrics for all users along with ways to ensure enforcement and with greater transparency throughout as crucial to increasing adoption. This is outlined in D3.1, 3.2 and 3.4.

## 1.3 Structure of the Document

The rest of this document is structured as follows:

- Section 2 provides information on how the SLA-Ready hub provides information to cloud service customers through the SLA Marketplace,
- Section 3 provides information on website sections targeting cloud service providers.
- Section 3 gives an overview of horizontal website sections
- Section 4 provides information on website visitor statistics as well as how SEO has been optimised



- Section 5 provides information on how website outputs will be sustained beyond the lifetime of the project.
- Finally, Section 6 summarises the conclusions of this deliverable.

## 2 Cloud Service Customers and the SLA Marketplace

To create clear a path towards cloud uptake, SLA-Ready has incrementally rolled out a **SLA Marketplace** offering a stepwise practical, hands-on guide and insider tips in order to help lower the entry barrier from the very outset.

As presented in D4.2, the SLA Marketplace has been designed (see Figure 1) and developed as the main entry point for supporting SMEs in understanding and managing cloud SLAs through the major outcomes from SLA-Ready. Where applicable, and based on the performed engagement activities (cf., Deliverable 4.4), the project outputs have been redesigned by structuring content around the specific needs of SMEs and in an use-friendly way to guarantee its practical adoption.



Figure 1: SLA Marketplace.

The marketplace is made up of four key outputs:

- **SLA Essentials:** A basic introduction to cloud SLAs and the cloud service lifecycle
- **Use cases:** A collection of 23 Use cases providing easy access to user requirements & priorities based on the CRM.
- **The SLA-Aid:** a hands-on online tool helping users identify their own specific priority areas based on the CRM and a set of associated recommendations.
- **SLA Repository:** Access to information on CSPs that have completed the SLA-Ready self-assessment questionnaire.

WP2 has played a central role in the deployment of the SLA Marketplace. The main outcomes of WP2, in particular the common reference model (CRM), were the foundational input for the SLA marketplace: WP3 developed a set of good practices for

the CRM, which then became part of WP4 Marketplace's services, in particular the SLA Aid.

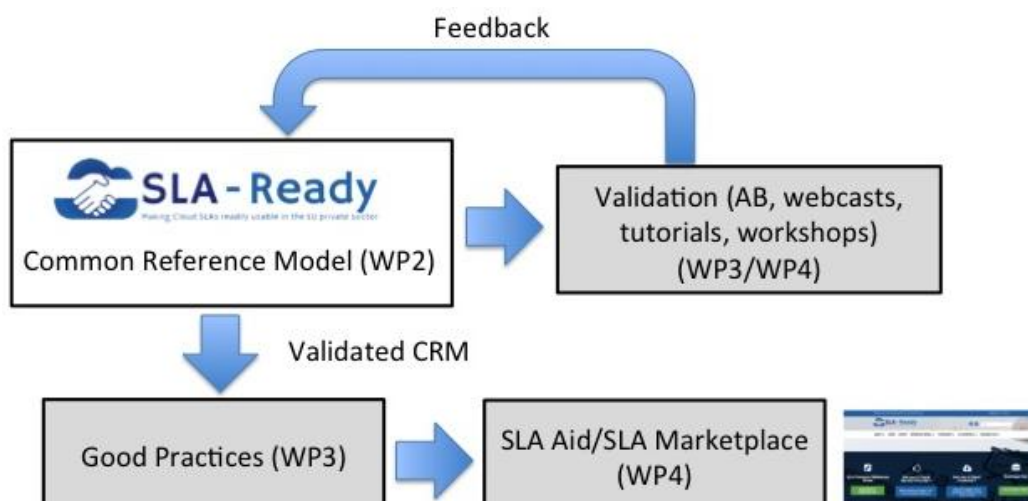


Figure 2: Seamlessly moving from the Common Reference Model to the SLA Aid/SLA Marketplace (Lifecycle). Shaded boxes correspond to Year 2's activities.

As seen in **Errore. L'origine riferimento non è stata trovata.**, the services available in the SLA Marketplace have originated from the CRM developed in WP2. For example, the SLA Aid (cf., Section 2.3) implements a set of good practices (elicited by WP3) that result from the feedback provided by validation of the CRM from a customer perspective driven by WP4. The validation of the CRM was a foundational activity in SLA-Ready, because it guarantees fulfilling the SME expectations and therefore paves the road for its adoption.

Activities taking place in WP3 have resulted in a focused set of contributions to standards and best practices related to Cloud SLAs, just as reported in D3.4. WP4 is tasked with making them available to CSPs (standards directory) and translating their benefits to SMEs through the developed CRM. These outcomes are also part of the SLA Marketplace, and can be observed under the “Standards” section<sup>2</sup> (cf., section 3.2).

Table 2 below summarises the main SLA-Ready outputs (Year 2) and their relevance to WP4. It is important to note the considerable effort of taking the outputs and putting them into well-packaged content (including interactive tools) for SMEs.

Table 1 SLA-Ready Outputs and WP4 Re-packaging.

SLA-Ready Outputs (Year 1 & 2)	SLA Marketplace
<b>December 2015:</b> D2.2 User requirements analysis and Cloud Service Lifecycle	Description of Cloud Service Lifecycle as the foundation for the marketplace and mapping of use cases.
<b>December 2015:</b> D3.2 Standardisation and	Information on SLA related standards activities and

<sup>2</sup> Please refer to <http://www.sla-ready.eu/>

international cooperation report:	contributions from SLA-Ready
<b>May 2016:</b> D2.3 Common Reference Model to describe, promote and support the uptake of SLAs	Benefits the industry by integrating a set of SLA components, such as common vocabularies, SLO service metrics and measurements. This is referenced throughout the SLA Marketplace.
<b>December 2016:</b> D2.4 Common Reference Model to describe, promote and support the uptake of SLAs – Final Report	Benefits the industry by integrating relevant updates into the SLA Marketplace, in particular the validated CRM. Use cases collected and mapped according to the CRM.
<b>December 2016:</b> D3.3 A Business Guide to Service Level Agreements: How to be a well-advised user of cloud services. An initial version will be made available in late September 2016.	This deliverable reports the good practices associated to the use of the CRM. This report also presents the overall design of the SLA Aid which was delivered in M22. Good practices are also highlighted in the use cases presented in the Marketplace.
<b>December 2016:</b> D3.4 High-level report on cloud SLA recommendations	The insights/validation provided by stakeholders used to refine the content of the Marketplace. Insight into the importance of standards for the Digital Single Market.
<b>December 2016:</b> D4.4 Socio-economic Impact of SLA-Ready and Exploitation Plan	Presents the impact and sustainability actions related to SLA Marketplace content, in particular the SLA Repository and the SLA Aid.

The following sections describe in more detail each element of the SLA Marketplace.

## 2.1 SLA Essentials

SLA-Ready aims to help prospective SME CSCs understand an SLA piece-by-piece and guide them through the different decisions that need taking along the SLA Life-cycle. Complexities run all the way through these phases. The Cloud SLA lifecycle is an important part of the provision of Cloud services. There is a tight correlation between the phases of the Cloud service lifecycle (Acquisition, Operation, Termination) and the 7 phases of the Cloud SLA lifecycle: Assessment; Preparation; Negotiation and contracting; Execution and operation; updates and amendments; escalation; termination and consequences of termination.

The purpose of this section is to introduce three key pieces of information as outlined in table 3 below.

**Table 2: SLA Essential sections description.**

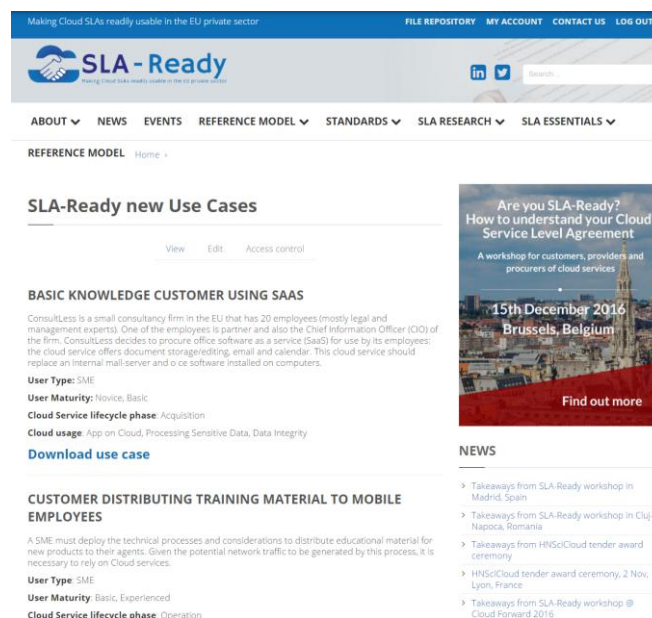
Page	Description
What is a cloud SLA	Basic information to define what a cloud SLA is and its role as part of an overall Master cloud service agreement. This section introduces the CRM and its elements.
The Cloud Service Lifecycle	The Cloud SLA lifecycle is an important part of the provision of Cloud services. There is a tight correlation between the phases of the Cloud service lifecycle (Acquisition, Operation, Termination) and the 7 phases

	<p>of the Cloud SLA lifecycle: Assessment; Preparation; Negotiation and contracting; Execution and operation; updates and amendments; escalation; termination and consequences of termination.</p> <p>This section provides details on each phase and are an important element in the use cases and helping users to orient themselves.</p>
Glossary of terms	The glossary provides definitions on key terms used in cloud SLAs.

## 2.2 Use Cases

The Marketplace provides quick and easy access to recommendations based on the CRM through a set of real-life use cases which account real-world experiences with cloud services. In order to **guide users through the SLA life-cycle users can access** a total of 23 use cases. These serve as a first entry point for cloud customers to understand both the cloud service lifecycle and to understand which CRM elements are of priority to the use case. The use cases are based on different entry levels such as the level of technical knowledge and experience of cloud services.

The use cases were gathered in order to contribute to D2.4 and validate the SLA-Readiness Index. They also have value for WP4 and raising awareness of SLAs for customers and providers.



SLA-Ready new Use Cases

**BASIC KNOWLEDGE CUSTOMER USING SAAS**

ConsultLess is a small consultancy firm in the EU that has 20 employees (mostly legal and management experts). One of the employees is partner and also the Chief Information Officer (CIO) of the firm. ConsultLess decides to procure office software as a service (SaaS) for use by its employees: the cloud service offers document storage/editing, email and calendar. This cloud service should replace an internal mail-server and office software installed on computers.

**User Type:** SME  
**User Maturity:** Novice, Basic  
**Cloud Service lifecycle phase:** Acquisition  
**Cloud usage:** App on Cloud, Processing Sensitive Data, Data Integrity

[Download use case](#)

**CUSTOMER DISTRIBUTING TRAINING MATERIAL TO MOBILE EMPLOYEES**

A SME must deploy the technical processes and considerations to distribute educational material for new products to their agents. Given the potential network traffic to be generated by this process, it is necessary to rely on Cloud services.

**User Type:** SME  
**User Maturity:** Basic, Experienced  
**Cloud Service lifecycle phase:** Operation

**NEWS**

- Takeaways from SLA-Ready workshop in Madrid, Spain
- Takeaways from SLA-Ready workshop in Cluj-Napoca, Romania
- Takeaways from HNSCloud tender award ceremony
- HNSCloud tender award ceremony, 2 Nov, Lyon, France
- Takeaways from SLA-Ready workshop @ Cloud Forward 2016


Figure 3: Use Cases website page.

As well as a summary, each use case is categorised and can be searched for by the following:

- Cloud Service life-cycle phase: Acquisition, Operation, Termination
- User maturity: Basic, Novice, Experienced
- User type: SME; Large enterprise; Government
- Cloud usage: App on a Cloud; Cloud Bursting; Processing Sensitive Data; Data Integrity; High Availability

Reports on each use case can also be downloaded. Each report identifies which CRM elements of high, medium and low priority and also includes good practices on high priority elements as well as access to tips on other elements. Good practices derive from the Business Guide (D3.3).

Basic knowledge customer using SaaS



ConsultLess is a small consultancy firm in the EU that has 20 employees (mostly legal and management experts). One of the employees is partner and also the Chief Information Officer (CIO) of the firm. ConsultLess decides to procure office software as a service (SaaS) for use by its employees; the cloud service offers document storage/editing, email and calendar. This cloud service should replace an internal mail-server and office software installed on computers.

**High priority practices**

**Roles and Responsibilities**

Roles and responsibilities should be specified in the cloud Service Level Agreement (SLA), and aligned to the definitions in standards like ISO/IEC 17788 and ISO/IEC 17789.

**Cloud SLA definitions**

Term and definitions should be specified in the cloud SLA, and aligned to EU guidelines and international standards.

**SLA change notifications**

The information provided by the Cloud Service Provider (CSP), specialized support, and notification period should be sufficient enough in order to give Cloud Service Customer (CSC) the chance to evaluate the severity of the planned SLA changes. The CSP should allow renegotiation of the SLA, and it should be feasible for the CSC to initiate termination of the SLA.

**User Type:** SME

**User Maturity:**  
Novice, Basic

**Cloud Service lifecycle phase:**  
Acquisition

**Cloud usage:** App on Cloud, Processing Sensitive Data, Data Integrity

Figure 4: example of Use Case report.

A full summary of the use cases can be found in D2.4.

## 2.3 The SLA-Aid

A key component of the SLA Marketplace is the SLA-Aid tool. The purpose of this tool is to help Cloud Services Customers identify priority areas they should look out for when comparing cloud SLAs. The SLA-Aid tool is based on our SLA Common Reference Model (CRM) which identifies key elements of an SLA that cloud customers require information on. It provides a common understanding of SLAs for cloud services, integrating SLA components like: terminology; SLA attributes; Service Level Objectives (SLOs); guidelines; and best practices. The tool goes through each element and helps the CSC decide on which elements are important to her/his particular situation. At the end of the questionnaire the CSC can download their own personalised report which highlights good practices on each element, ordered by the priorities they have identified. The report can be used as a check-list based on the user's own priorities helping them to understand what should they expect in their cloud SLA.



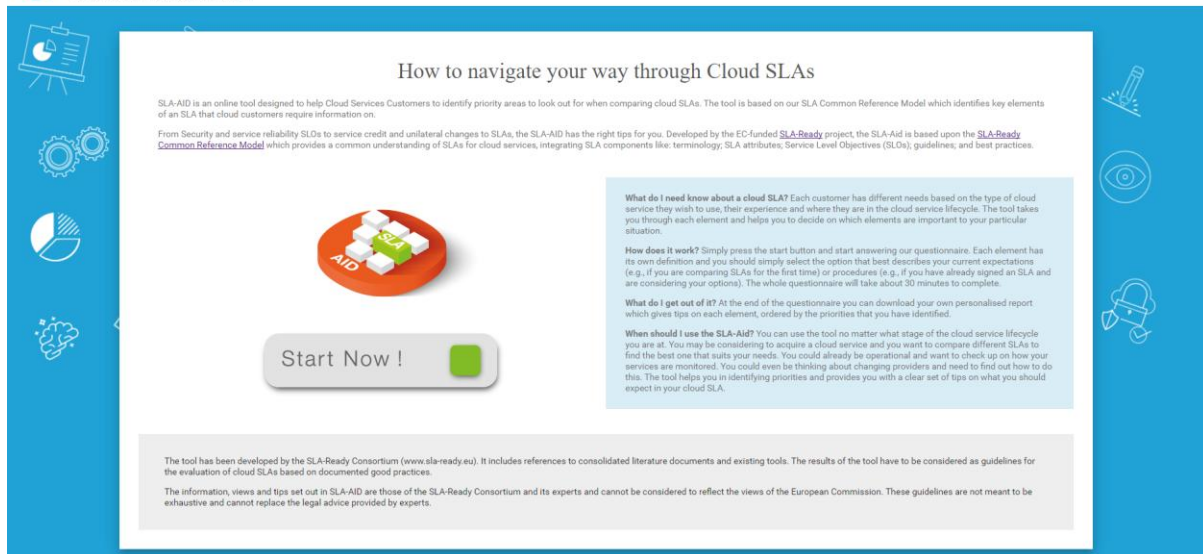


Figure 5: SLA-Aid landing page.

Completion of the questionnaire takes approximately 30-45 minutes depending on the knowledge of the user. The tool is designed to give detailed information to the user so that they are made aware of all the key elements of the CRM. By listing good practices by order of priority in the final report, the user is able to easily access information most relevant to them. A more detailed overview of the SLA-Aid can be found in D3.3.

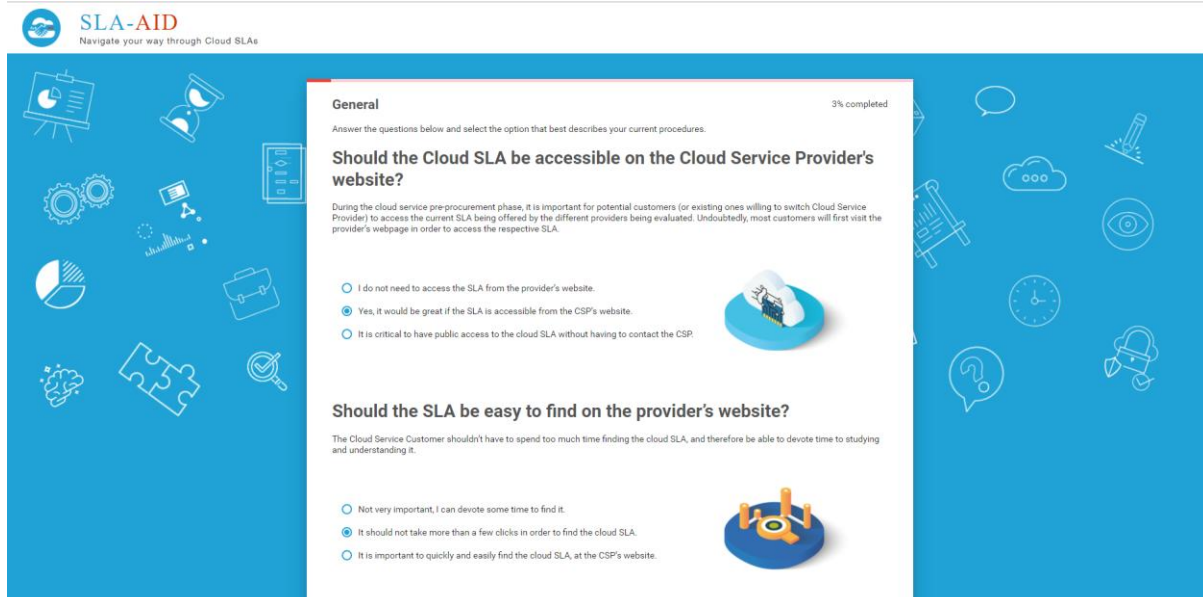


Figure 6: SLA-Aid questionnaire 1st page.

## 2.4 SLA Repository

The SLA Repository provides marketplace users with information on CSPs that are SLA-Ready i.e. CSPs that have completed the SLA-Ready self-assessment questionnaire. The



objective is to provide visibility with CSPs who have carried out the self-assessment and a service for potential customers to access CSPs who are working towards greater transparency in their SLAs.

The structure of the data in the repository resembles that of the developed CRM (cf., D2.4). This design decision was taken to provide consistency with relevant outcomes from the project (including the developed good practices shown in D3.3), therefore allowing automated post-processing with future versions of tools like the SLA Aid.

## SLA Repository

### TRUSTED PROVIDERS COMMITTED TO GREATER TRANSPARENCY IN CLOUD SERVICES

The SLA Repository provides you with a list of Cloud Service Providers that have carried out a self-assessment on their own SLAs based on the SLA-Ready Common Reference Model. Use our repository to find out how well these providers are aligned to our reference model which provides 30 essential elements that you should find in any cloud SLA.

From data protection and service credit, to Service Level Objectives and security, find out more about the SLA Common Reference model [here](#).

You can also access further information about the providers and their services. Remember, all providers listed are committed to being transparent in their SLAs and to providing greater trust in cloud computing.

The SLA Repository is part of the SLA-Ready drive towards increasing transparency in Cloud SLAs, thus building customer trust.

CSP	7bulls.com	Atlassian	china enterprise ICT Solutions Limited	CITEC	Encore Lab S.L.	ILAND	Indra Sistemas	Mailguard	Qinec Ltd	Siteimprove
SLA URL 				<a href="#">Link</a>						<a href="#">Link</a>
Findable 			Homepage link	Homepage link		Internal search engine	Homepage link			
Choice of law 	✓	✗	✗	✓	✓	✓	✓	✗	✗	✗
Roles and responsibilities 	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓
Cloud SLA definitions 	✗	✗	✓	✗	✓	✓	✓	✓	✓	✓
Revision date 	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓
Update Frequency 	Does the SLA specify the date of its last revision? As in the case of many other related documents (e.g., Master Service Agreement and Cloud Service Agreement), the Cloud Service Provider should update its SLA based on for example, business needs or technology updates. In these cases, the revision date becomes a metric for the Cloud Service Customer to assess how often the Cloud Service Provider is aligning its published SLA to those updates.			✗	✗	✓	✓	✓	✓	✗
Previous version and revisions 				✗	✗	✗	✓	✗	✓	✗
SLA duration 				✗	✗	✓	✓	✗	✓	✗
SLA language 				✗	✗	✓	✓	✗	✗	✗
Machine-readable format 				✗	✗	✓	✓	✗	✓	✓
Nr. of pages 				15	1			12	5	
Contact details 	✓	✗	✗	✓	✗	✓	✓	✓	✗	✓
Contact availability										

Figure 7: SLA-Repository

Results of each CSP are presented in table format with more information available including why each CRM element is important. In addition, each CSP entry can be viewed on a dedicated page where further information can be accessed. This includes:

- General information on the Cloud Service Provider and related services
- Responses to a self-assessment questionnaire distributed in Y2
- Links to CSP website and/or CSA Star Registry entry



## Mailguard

MailGuard was founded in Australia 2001 to address the growing online security concerns of business. Recognizing that organizations needed a simple and inexpensive way to manage unwanted email and web content, we pioneered a range of cloud security solutions to provide complete protection against online threats such as malware, spyware, viruses and spam. Today, we've built a reputation as one of Australia's best technological innovators and become the trusted name in enterprise cloud security with a rapidly expanding suite of products and services.

### Submission Info

Date Listed: April 30, 2016

[Web Page](#)

[★ Go to CSA STAR Registry entry](#)

#### ▼ General

**Choice of law:** No

**Roles and responsibilities:** Yes

**Cloud SLA definitions:** Yes

#### ▼ Freshness

**Revision date:** Yes

**Update Frequency:** Yes

**Previous versions and revisions:** No

**SLA duration:** No

Figure 8 SLA Repository entry

As noted in more detail in D3.4, a number of CSPs listed in the repository are also included in the CSA STAR Registry. CSA may link the CSP entries in the registry to their SLA Repository results.

### 2.4.1 Linking the SLA Repository to the CSA STAR Repository

The figure below displays how the CSA STAR repository could link back to the SLA repository. We present an example from the STAR registry<sup>3</sup> using one of the respondents of the questionnaire who agreed to make their answers public. Under 'Additional Info' will appear the category 'SLA info' which will redirect users to the SLA-Ready repository to read the SLA info of the provider they are interested in. This will be covered in more detail in D4.4.

<sup>3</sup> [https://cloudsecurityalliance.org/star/#\\_registry](https://cloudsecurityalliance.org/star/#_registry)



<b>iland</b>  iland is an award winning enterprise cloud infrastructure provider with seven datacenters located in Boston, Washington D.C., Houston, Los Angeles, Dallas, Manchester and London. iland was founded in 1995 and is a privately-owned and organically-grown company with extensive experience in the cloud market.  <a href="#">Read more...</a>	<b>Submission Info</b>  Date listed: November 04, 2014  <b>Additional Info</b>  Service supports <a href="#">SLA info</a>
<div><div>SELF-ASSESSMENT</div><div>CERTIFICATION</div><div>ATTESTATION</div><div>CONTINUOUS</div></div>	

Figure 9 Example of STAR Registry Entry providing link to SLA-Ready repository

### 3 Cloud Service Providers and the CRM

In order to encourage a culture of transparency and trust amongst Cloud Service Providers concerning cloud SLAs, SLA-Ready has provided a number of website sections to raise awareness on key elements that should be included in a cloud SLA, encourage providers to carry out a self-assessment of their SLA and finally to publish their results in the SLA Repository.

#### 3.1 Common Reference Model

A full website section is dedicated to outlining the importance of the CRM and diluting content from D2.3 & 2.4 into easy accessible content. The Common Reference Model integrates a set of SLA common components, such as common vocabularies and service level objective service metrics, as well as best practices and relevant standards to fill identified gaps in the current SLA landscape.

Cloud service customers benefit from understanding the language used in contractual agreements like SLAs and from having tools to check the service capabilities as provided in the SLA Marketplace. The Common Reference Model provides the basis for cloud service providers to self-assess their SLAs and also benefit from a deeper understanding of specific customer requirements, including legal and data protection compliance criteria and security and privacy requirements.

As well as information on the approach and methodology of the CRM<sup>4</sup>, all elements of the CRM are also presented<sup>5</sup>. In addition, in response to Y1 review recommendations, the CRM was partly validated through two questionnaires published online collecting feedback from both CSPs and CSCs.

### 3.2 SLA Self-assessment questionnaire

In order to compile the required SLA data and also validate the CRM to the CSP community, a self-assessment questionnaire was published online<sup>6</sup> and distributed to CSPs in partner networks including CSPs from the CSA STAR repository<sup>7</sup> (+180 at the time of writing this deliverable). The questionnaire was accompanied by a companion document used to allow CSPs self-assessing their SLAs based on the developed CRM (cf., Annex 3). As described in D2.4, the “CSP Self-assessment” column shown in the table from **Errore. L'origine riferimento non è stata trovata.** was formatted in such a way that the SLA-Readiness Index could be applied to the gathered information.

Results from CSP self-assessment are published in the SLA Repository<sup>8</sup>.

The CSP questionnaire<sup>9</sup> has been maintained as a source for future entries into the SLA Repository.

### 3.3 SLA Standards

One of the three major objectives of the European Cloud strategy regards standards and certification, with the aim of building trust and confidence in Cloud services by helping:

*“users evaluate and compare services, and know which ones to trust. For example, we will put Cloud users more in control of their data, with standards based on the principles of interoperability, portability and reversibility”<sup>10</sup>.*

A core activity within SLA-Ready is standardisation with the aim of building consensus on best/good practices through an-depth analysis of the current standards landscape and industry-led initiatives. Our goal is to empower Cloud service customers through the use of standardised Cloud SLAs as a critical step towards better understanding the level of

<sup>4</sup> <http://www.sla-ready.eu/SLA-Ready%20Common%20Reference%20Model%20Challenge%20%26%20Approach>

<sup>5</sup> <http://www.sla-ready.eu/common-reference-model>

<sup>6</sup> <http://www.sla-ready.eu/sla-common-reference-model-questionnaire-csps>

<sup>7</sup> [https://cloudsecurityalliance.org/star/#\\_registry](https://cloudsecurityalliance.org/star/#_registry)

<sup>8</sup> Only results from CSPs that specifically agreed to have results published are available in the SLA Repository

<sup>9</sup> <http://www.sla-ready.eu/sla-common-reference-model-questionnaire-csps>

<sup>10</sup> A European strategy for Cloud computing, op cit.

security and data protection offered by the CSP, and for monitoring the provider's performance and security levels.

To give a context to the importance of standards for cloud computing, the standardisation section highlights the importance of standardisation to the Digital Single Market<sup>11</sup> and explains the central role of standards in the CRM. Indeed coverage of standards in the CRM is also outlined and the coverage of the CRM elements included in relevant standards/best practices<sup>12</sup>. SLA-Ready takes a pro-active approach to standardisation efforts by engaging with relevant standards groups and actively influencing their Cloud SLA initiatives. The most relevant standards groups are also described and information on how SLA-Ready has contributed to them. This includes ISO 19086 parts 1-4<sup>13</sup>, ETSI<sup>14</sup>, C-Sig<sup>15</sup> and CSA (Cloud Trust<sup>16</sup> and Security as a Service<sup>17</sup>). Related deliverables (D3.1 and D3.2) are also available<sup>18</sup>.

### 3.4 SLA Research

Extensive research was carried out in WP2 in the preparation of the CRM. This is outlined in this section with information on security policies and SLAs<sup>19</sup>, SLA assessment<sup>20</sup>, SLA negotiation<sup>21</sup>, SLA Monitoring<sup>22</sup>.

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<sup>11</sup> <http://www.sla-ready.eu/standardisation-dsm>

<sup>12</sup> <http://www.sla-ready.eu/standards-common-reference-model>

<sup>13</sup> <http://www.sla-ready.eu/isoiec-19086-part-1-%E2%80%93-overview-and-concepts>; <http://www.sla-ready.eu/isoiec-19086-part-2-%E2%80%93-metrics>; <http://www.sla-ready.eu/isoiec-19086-part-3-%E2%80%93-core-requirements>; <http://www.sla-ready.eu/isoiec-19086-part-4-%E2%80%93-security-and-privacy>

<sup>14</sup> <http://www.sla-ready.eu/sla-ready-etsi>

<sup>15</sup> <http://www.sla-ready.eu/sla-ready-c-sig>

<sup>16</sup> <http://www.sla-ready.eu/cloud-trust>

<sup>17</sup> <http://www.sla-ready.eu/security-service>

<sup>18</sup> <http://www.sla-ready.eu/standardisation-reports>

<sup>19</sup> <http://www.sla-ready.eu/security-policies-slas>

<sup>20</sup> <http://www.sla-ready.eu/sla-assessment>

<sup>21</sup> <http://www.sla-ready.eu/sla-negotiation>

<sup>22</sup> <http://www.sla-ready.eu/sla-monitoring>

## 4 Horizontal sections

### 4.1 News

The section “News” is regularly updated with information on Cloud developments and in particular related to Service Level Agreements and cloud contracts. Information on project news is also published here.

### 4.2 Events

The events section<sup>23</sup> focuses in particular on events where SLA-Ready has been presented either through presentations or participation at roundtables. In addition, presentations, registration and recordings of workshops organised by SLA-Ready at national trade associations and SME clusters are also included here.

Also in the main menu visitors can find section “Events” containing information about “events”: workshops, conferences, seminars on Cloud-related topics. Both sections are easy to find and are conspicuously exposed on the homepage listing two latest information on news and events.

### 4.3 About

The section “About” covers content related to the SLA-Ready project and consortium with sub-sections:

- Advisory board: Advisory board members and profiles
- Consortium: Information on consortium members
- Synergies: Highlighting contributions to the Data Protection, Security and Privacy EC cluster; contributions to ISO 19086; collaborations with other EC-funded projects.
- Reports: All project deliverables
- Communication kit: Press releases, fliers and other printed material.

## 5 SEO Optimisation & Website Statistics

### 5.1 SEO Optimisation

In Y2 the SLA-Ready Hub has evolved in order to improve accessibility and improve user experience. We have also worked on a SEO implementation of the web platform.

We have created new sections with clear entry points to the website for outputs and relevant users: SLA Marketplace, the Common Reference Model, SLA standards, SLA

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<sup>23</sup> <http://www.sla-ready.eu/events>

research. The homepage also gives predominance to the SLA Marketplace which includes project outputs which in particular target the SME community such as the use cases, SLA-Aid and SLA Repository. Access to these pages is also possible through the main menu, with drop-down menus providing easy access to all relevant content.

The website's Search Engine Optimisation (SEO) has also been improved in order to make the content on the portal more appealing to search engines. To improve the indexation, we added the following: new XML side-map; meta title, meta descriptions and meta keywords modules on the backend of the website; improved the snippet of the most relevant existing pages and on the new pages created; installed the Google Search Console to monitoring the state of the index and analyse which keywords generate organic traffic to our website.

The current market is highly competitive on issues related to cloud computing with projected investment in effective paid campaigns being beyond budget available. We therefore worked on the positioning of content relying on very specific keywords. We also concentrated on producing quality content in order to generate traffic.

## 5.2 Website Statistics

Since the launch of the website there have been 9,645 unique visitors (M1-23). The website gained 37.047 total page views (repeated views of a single page are counted). Table 2 shows website statistics and related KPIs which have been reached.

Table 3: SLA-Ready website overall statistics.

Overall Website Statistics	KPI	M1-12	M1-23
Sessions	11,000	5,391	14,046
Unique visitors	9,000	4,459	9,645
Page views	20,000	9,101	37,047



Figure 10: Website visitors (7 March – 18 November 2016)Website visitors (7 March – 18 November 2016).

Figure 9 shows website weekly visitors. Since the beginning of the Common Reference Model validation phase (May 2016) the website experienced a growth in terms of weekly unique visitors. For instance, the release of the questionnaire for the validation of the Common Reference Model by cloud service providers, along with the project partners' participations to the SecureCloud 2016 conference, caused a peak of website visitors in Week 21 (23-29 May 2016).

This growth is also due to an increase in the project's social media activities (see Figure 10) and to the release of press releases targeted for cloud service providers (28 June 2016) and cloud customers SMEs (15 July 2016), which saw two more peaks. The release of project's tool SLA-AID (October 2016), along with its promotion on socials and during events such the HNSciCloud tender award ceremony (2 November 2016), increased the interest of the users. The 3 workshop organised by SLA-Ready project in Madrid, Spain (19 October 2016), Cluj-Napoca, Romania (3 November 2016) and again in Madrid (15 November 2016), consolidated the number of website unique visitors.



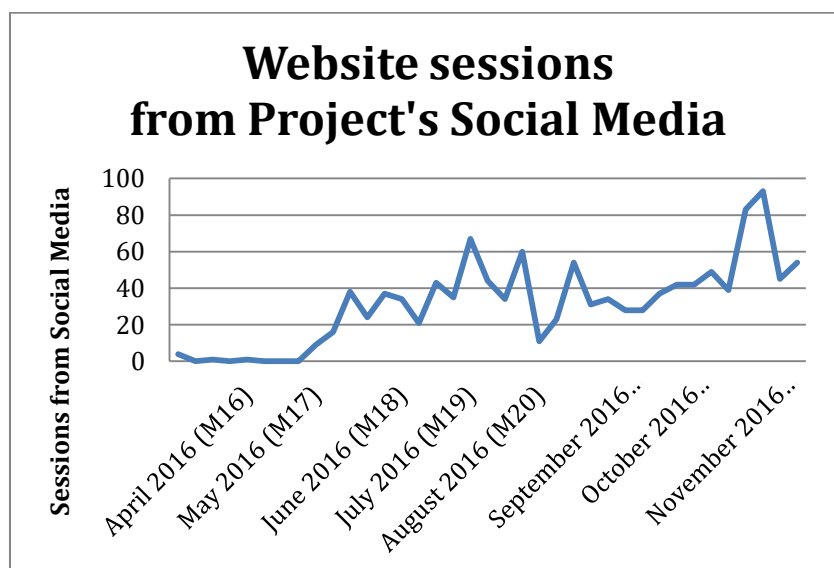


Figure 11: Website sessions from Project's social media (7 March – 18 November 2016)

The KPIs below (Table 5) measure the effectiveness of the content created and sourced for the cloud business hub from January 2015 to November 2016.

Table 4: Homepage and 5 most visited pages.

Most visited website pages (unique page views)	
Home page	9,548
Top page view 1: Events	648
Top page view 2: Common Reference Model	625
Top page view 3: About	545
Top page view 4: Cloud SLA Lifecycle	514
Top page view 5: News	511

Table 5 shows the unique page views of the website main menu sections. Statistics highlight the interest of the users for the project main achievement, the Common Reference Model: the website version obtained 1.058 page views and the PDF version has been downloaded 172 times. A secondary objective of the project, the contribution to cloud SLA standardisation initiatives, obtained a smaller but considerable attention by the website user. Webpages like Events and News had more unique views thanks to the boost given by SLA-Ready workshops and project partners attendance to external events.

Table 5: Unique page views of the website main menu sections

Main Menu Sections (unique page views)	M 1-24
Reference Model	1,250

Standards	516
SLA Research	197
News	2,357
Events	2,417
About	1,144

## 6 Conclusions

This final report updates the content of the previous release (D4.2), with the published content focus of both services based on the outcomes from WP2 and WP3. Particular emphasis was put in describing the SLA Marketplace including in particular the SLA Aid and SLA Repository, which represent a concrete instantiation of the elicited CRM good practices (cf., D3.3).

The Hub and Marketplace, are central to educating and empowering CSCs from European SMEs by offering a suite of services, tools, practical guides and tutorials which combine SLA-Ready outputs with external information (e.g. standards, outputs from other EU projects). The main contribution of both Hub and Marketplace resides in presenting validated content, which has been already exposed to SMEs during the project's lifetime, and has continuously shaped the development of good practices and services.

SLA-Ready has positioned itself as a central hub of information and tools to empower small businesses by offering vital insights into how to deal with all aspects related to the SLA and SLOs, the contractual clauses, and coverage (or lack of it) on security, privacy, data management and data protection. Furthermore, the project's legacy is ensured thanks to the influence it brought into the development cycle of important cloud SLA standards/best practices, which are also showcased in the Marketplace.

Potential sustainability plans will be explored in full in D4.4. These include promotion of of the SLA-Marketplace tools and services to National Trade Associations and ICT Clusters and supporting them in offering these services to their members by back-linking from their own websites to SLA-Ready. In addition, the Marketplace will also be back-linked from the CloudWatchHUB.eu and compliment a collection of awareness raising tools and services for cloud customers. Finally, as mentioned in this document, the SLA Repository could be integrated with the CSA STAR WATCH. All the presented outcomes are related to the partner's exploitation activities and SLA-Ready's sustainability actions, as discussed in D4.4

## *Annex 1 – Document Log*

DOCUMENT ITERATIONS		
V1.0	Table of Content, template for data collection and instructions to contributing authors (June-15th).	Jesus Luna (CSA)
V1.1	Contribution to assigned sections and analysis of questionnaires answers (November-4 <sup>th</sup> )	Jesus Luna, Marina Bregou (CSA)
V1.2	Document re-organisation & additional sections added	Nicholas Ferguson & Matteo Scarpellini (Trust-IT Services)
Final version		Marina Bregou (CSA) & Nicholas Ferguson (Trust-IT Services)

## Annex 2 - SLA Repository: CSP Self-Assessment

This annex presents the questionnaire used to allow CSPs self-assessing their SLAs based on the developed CRM.

Group	Name of CRM element	Explanation/Assessment Question	CSP Self-assessment	Comments
General	SLA URL	Is there a publicly (online) available version of your cloud SLA?	0 = No , 1= Yes (please provide URL)	
	Findable	How can customers find the SLA on your website?	0 = n/a , 1 = External search engine, 2 = Internal search engine , 3 = Homepage link	
	Choice of law	Is the SLA specific to a particular jurisdiction or geographical area?	0 = n/a or No, 1 = Yes	
	Roles and responsibilities	Does your SLA contain a clear definition of roles and responsibilities?	0 = n/a or No, 1 = Yes	
	Cloud SLA definitions	Does your SLA contain relevant definitions used in the text?	0 = n/a or No, 1 = Yes	
Freshness	Revision date	Does your SLA specify the date of its last revision?	0 = n/a or No, 1 = Yes	
	Update Frequency	Does your SLA specify the frequency of performed updates based on a reported "Last Update" value?	0 = n/a or No, 1 = Yes	
	Previous versions and revisions	Are the public available the previous versions of the SLA?	0 = n/a or No, 1 = Yes	
	SLA duration	Does your SLA contain a clear specification of its validity period?	0 = n/a or No, 1 = Yes	
Readability	SLA language	Is your SLA specified in more than one language?	0 = n/a or No, 1 = Yes	
	Machine-readable format	Is your SLA available in machine-readable format?	0 = n/a or No, 1 = Yes	
	Nr. of pages	What is the number of pages on your SLA? Only applies to SLAs in PDF/document format.	0 = n/a or No, 1 = Please specify the number of SLA pages	
Support	Contact details	Does your SLA contain a reference to the helpdesk number or other details to contact support?	0 = n/a or No, 1 = Yes	
	Contact availability	Does your SLA contain information about contact availability, specifying days of the week and working hours?	0 = n/a or No, 1 = Yes	
Credits	Service Credit	Does your SLA has a clear specification of the service credits provided to the CSC?	0 = n/a or No, 1 = Yes	

	Service credits assignment	Does your SLA specify the conditions whether a service credit shall be provided or not to the customer?	0 = n/a or No, 1 = Yes	
	Maximum service credits (Euro amount) provided by the CSP	Does your SLA describe how much does the can CSP credit (Euros) to the customer?	0 = n/a or No, 1 = Yes	
Changes	SLA change notifications	Does your SLA specify of how the CSP notifies customers about SLA changes?	0 = n/a or No, 1 = Yes	
	Unilateral change	Does your SLA describe if the CSP is entitled to unilaterally change it?	0 = n/a or No, 1 = Yes	
Reporting	Service Levels reporting	Does your SLA describe if reports about achieved Service Levels are provided to the customer?	0 = n/a or No, 1 = Yes	
	Service Levels continuous reporting	Does your SLA explain if/how the service level reports are continuously updated?	0 = n/a or No, 1 = Yes	
	Feasibility of specials & customisations	Does your SLA clearly define any “specials”/exceptions and other possible customisations?	0 = n/a or No, 1 = Yes	
	General Carveouts	Does your SLA clearly define CSP assumptions, exclusions, scope of force majeure, and other carve outs to the negotiated cloud services, SLOs and SLA?	0 = n/a or No, 1 = Yes	
SLOs & Metrics	Specified SLO metrics	Does your SLA clearly and unambiguously specifies metrics related to the SLOs defined in the SLA?	0 = n/a or No, 1 = Yes	
	General SLOs	Does your SLA specify SLOs related to aspects like service monitoring, accessibility, availability, termination of service, applicable certifications, and governance?	0 = n/a or No, 1 = Yes	
	Cloud Service Performance SLOs	Does your SLA specify SLOs related to aspects like response time, capacity, and elasticity?	0 = n/a or No, 1 = Yes	
	Service Reliability SLOs	Does your SLA specify SLOs related to aspects like service resilience, disaster recovery, and customer’s data backup/restore?	0 = n/a or No, 1 = Yes	
	Data Management SLOs	Does your SLA specify SLOs related to aspects like IPR, CSC/CSP data, derived data, account data, portability, data deletion/location/examination, and law enforcement access to CSC data?	0 = n/a or No, 1 = Yes	
	Security SLOs	Does your SLA specify SLOs related to aspects like cryptography, physical/operational/communication security, incident management, compliance, and business continuity?	0 = n/a or No, 1 = Yes	

	Personal Data Protection SLOs	Does your SLA specify SLOs related to aspects like consent and choice, limitation, accountability, PII collection/use/retention/disclosure limitation, and privacy compliance?	0 = n/a or No, 1 = Yes	
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