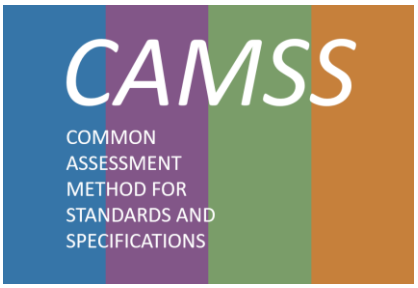

ASSESSMENT SUMMARY v1.0.0

File Transfer Protocol over Transport Layer Security (FTPS)[1]

Internet Engineering Task Force (IETF)[2]

[1] https://tools.ietf.org/html/rfc4217

[2] https://ietf.org

Change Control

Modification	Details
Version 1.0.0	
Initial version	

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1. INTRODUCTION

The present document is a summary of the assessment of FTPS carried out by CAMSS using the CAMSS EIF assessment scenario. The purpose of this scenario is assessing the compliance of a standard or specification with the European Interoperability Framework (EIF)[3].

2. ASSESSMENT SUMMARY

File Transfer Protocol over Transport Layer Security (FTPS) is an extension of the network protocol File Transfer Protocol (FTP) that adds support for the Transport Layer Security (TLS). Its main purpose is to exchange data between multiple nodes. FTPS was first published as a draft RFC in 1996, but the RFC was not finalized until 2005. It is developed and maintained by the Internet Engineering Task Force (IETF).

2.1. Interoperability Principles

Interoperability principles are fundamental behavioural aspects that drive interoperability actions. They are relevant to the process of establishing interoperable European public services. They describe the context in which European public services are designed and implemented.

***The specification fully supports the principles setting context for EU actions on interoperability*:**

- **Subsidiarity and proportionality**
  There is no Member State that includes FTPS in their national catalogue with The National Interoperability Framework (NIF) aligned with at least 4 out of 5 sections of the European Interoperability Framework (EIF) according to the National Interoperability Framework Observatory (NIFO)[4] factsheets.

The specification partially supports the principles setting context for EU actions on interoperability:

- **Openness**
  FTPS is a secure internet protocol for the exchange of data over an Internet network, so it supports the first level of maturity defined in the Tim Berners-Lee's 5-star for Open Data. The specification is an open specification available for everyone to study or use. In IETF, Stakeholders have the opportunity to contribute to the development of FTPS, and the decision-making process includes a public review. As an IETF standard, FTPS is licensed on a (F)RAND and royalty-free basis.

  Although FTPS was finally published as RFC in 2005 and it is mature enough for the development of products and services, it does not have enough market acceptance to consider FTPS a specification for the creation of innovate solutions.

[3] https://ec.europa.eu/isa2/eif_en

[4] https://joinup.ec.europa.eu/collection/national-interoperability-framework-observatory-nifo/nifo-factsheets

- **Transparency**
  FTPS as an extension of FTP, is used for file exchange by some public organisations. By allowing public administration to share information with others, it fosters the visibility of data and it helps to ensure the availability of interfaces. However, FTPS is only the protocol to exchange this data, it doesn't help to comprehend it.

- **Reusability**
  FTPS is a business domain agnostic specification that can be reused in a cross-domain way. Moreover, it is available for its use and implementation at the IETF's webpage defined in several RFCs. However, there is no national or European platform with the specification FTPS available for free.

- **Technological neutrality and data portability**
  FTPS is an extension of the File Transfer Protocol (FTP) that adds support for the Transport Layer Security (TLS) to secure the data exchange. So it is dependant of FTP and TLS versions.

  The specification is proportionate to the needs of its user and it fosters data portability between systems and applications supporting the implementation and evolution of European public services when legally possible.

***The specification does not support the principles related to generic user needs and expectations*:**

- **User-centricity**
  FTPS is an extension of FTP which allows public administration to exchange information securely, so it avoids multiple requests of standard information to citizens or businesses.

- **Inclusion and accessibility**
  The purpose of FTPS is not related to e-accessibility. Therefore, this criterion is considered not applicable to this specification.

- **Security and privacy**
  FTPS is a network protocol for transferring files over the Internet. It has the same specifications as FTP but it uses the Transport Layer Security (TLS) to secure the communications.

- **Multilingualism**
  The purpose of FTPS is not related to the delivery of multilingual services. Therefore, this criterion is not applicable to this specification.

The specification partially supports the foundation principles for cooperation among public administrations:

- **Administrative Simplification**
  As an internet protocol for data exchange, FTPS can be used for secure exchange of documents over the Internet which it can reduce administrative burden.
- **Preservation of information**

The purpose of FTPS is not related to long term preservation of electronic records. Therefore, this criterion is considered not applicable to this specification.

- **Assessment of effectiveness and efficiency**
  There is information that compares different secured versions of FTP (FTPS and SFTP), and the main differences between them. From there, it can be assessed the effectivity and effectiveness of the usage of FTPS in comparison with other type of FTP[5].

2.2. Interoperability Layers

The interoperability model which is applicable to all digital public services includes:

- Four layers of interoperability: legal, organisational, semantic and technical;
- A cross-cutting component of the four layers, 'integrated public service governance';
- A background layer, 'interoperability governance'.

The Specification supports the implementation of digital public services complying with the EIF interoperability model:

- **Interoperability governance**
  Germany as Member States is recommending FTPS in their ICT National Catalogues. Additionally, FTPS is already associated with European Interoperability Reference Architecture (EIRA) ABBs in the European Library of Specifications (ELIS). More specifically, FTPS can define the interoperability aspects of the "Network", "Networking Service", "Public Network" and "Private Network" ABBs of the EIRA Technical View. The specification is included within catalogues of standards at the national level but not at the EU level. FTPS has been selected for its use in the initiative "The Big Data Platform Initiative of the EC Joint Research Centre", it takes care of ensuring data transfer to EOS.

- **Integrated public service governance & Legal Interoperability**
  No evidences have been found of the specification being included in a formal interoperability agreement between organisations involved in the European public services provision. Moreover, no assessment verifying the compliance of FTPS with the European standardisation regulation has been found.

- **Organisational interoperability**
  FTPS is not a business process modelling standard or specification and does not define organisational interoperability aspect. The purpose of the specification is not related to organisational Interoperability.

[5] https://www.goanywhere.com/blog/2016/11/23/sftp-vs-ftps-the-key-differences

- **Semantic Interoperability**
  FTPS as an internet protocol for the exchange of data, supports the first level of maturity which corresponds to make data available as structured data. However, it does not define a reusable data model.

- **Technical interoperability**
  FTPS is an open specification available to everyone for study or use.

3. ASSESSMENT RESULTS

This section presents an overview of the results of the CAMSS assessments for **File Transfer Protocol over Transport Layer Security (FTPS)**. The CAMSS "Strength" indicator measures the reliability of the assessment by calculating the number of answered (applicable) criteria. On the other hand, the number of favourable answers and the number of unfavourable ones are used to calculate the "Automated Score" per category and an "Overall Score".

Category	Automated Score	Assessment Strength	# Favourable	# Unfavourable	# Not Applicable
Principle setting the context for EU actions on interoperability	0%	100%	0	1	0
Core interoperability principles	74%	100%	14	5	0
Principles related to generic user needs and expectations	100%	50%	2	0	2
Foundation principles for cooperation among public administrations	100%	67%	2	0	1
Interoperability layers*	65%	91%	13	7	2
Overall Score	68%	87%	23	11	5

**The technical interoperability layer is covered by the criteria corresponding to the core interoperability principle ''Openness''.*

With an 87% of assessment strength, this assessment can be considered representative of the specification compliance with the EIF principles and recommendations.

The Overall Automated Score of 68% demonstrates that the specification supports the European Interoperability Framework in the domains where it applies.

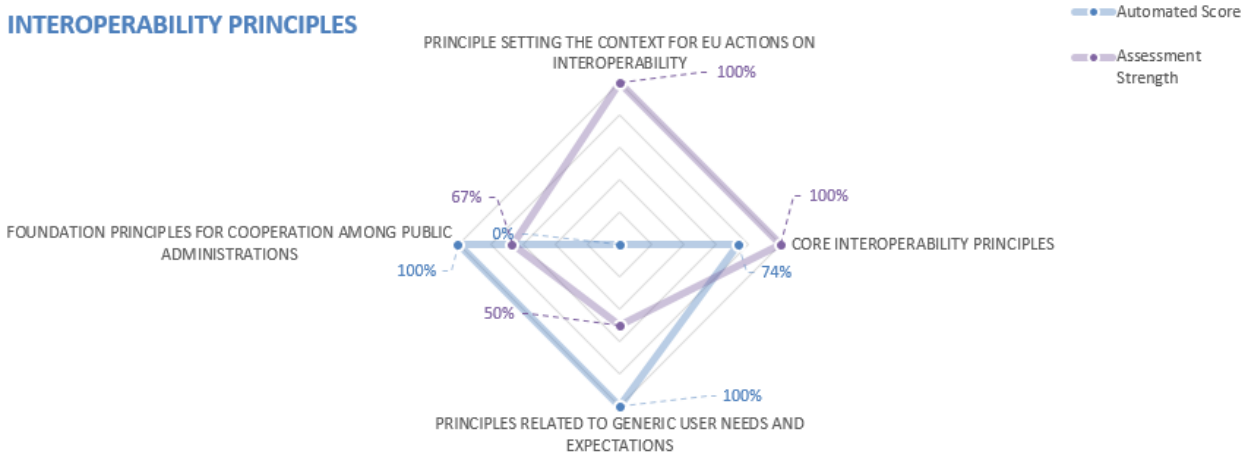

Figure 1. Interoperability principles Results

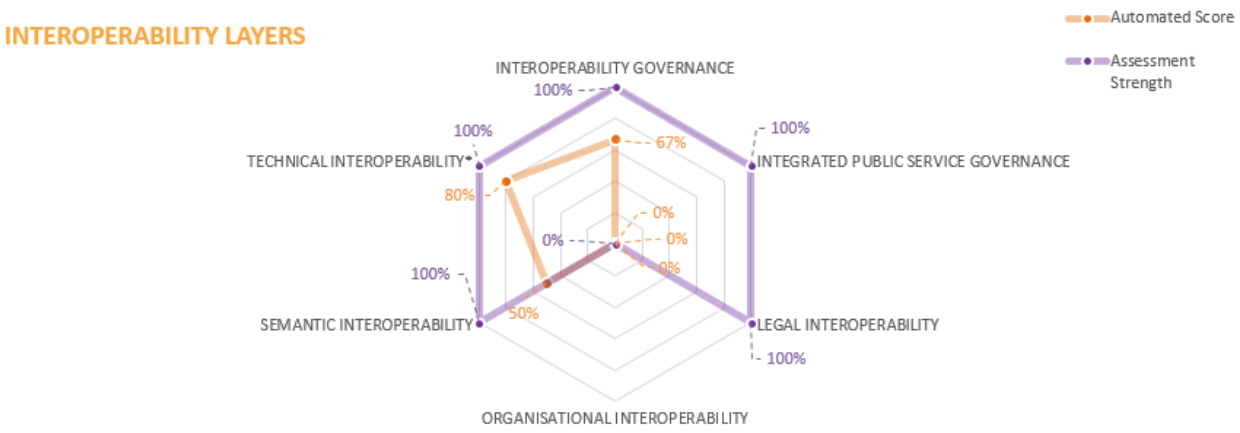

Figure 2. Interoperability layers Results