ASSESSMENT SUMMARY v1.0.0

Portable Network Graphics (PNG)[1]

International Organization for Standardization (ISO)[2]

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[1] https://www.iso.org/standard/29581.html

[2] https://www.iso.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 PNG 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

The **Portable Network Graphics** (PNG) is a raster-graphics file format that supports lossless data compression. It was created for the transmission of images over the internet but not taking into account professional quality, which means that non-RGB colours are not supported by PNG.

PNG was first published as W3C recommendation in October 1996. Later in March 1997 was published in IETF's website as informational RFC 2083. In 2004, it became an **ISO/IEC standard (15948:2004 PNG).**

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**
  PNG is included in 3 national catalogues of recommended specifications. They belong to Estonia, Spain and Sweden. The National Interoperability Framework (NIF) of these Member States is fully 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**
  As defined on the TC standardisation, only ISO members are involved in the development of ISO standards. Moreover, the specification is not available for free for everyone to study, payment is needed to reach access to the standard. Also, PNG is not licensed in any (F)RAND or royalty-free basis. Related to the publication of open data, the standard only supports the first level of maturity for the publication of data as open data, following Tim Berners-Lee's 5-star schema for open data.

  However, PNG has a significant market acceptance which demonstrates that it is mature enough for its use. However, it can not be considered an asset to build innovative solutions.

- **Transparency**

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

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

Although PNG's purpose is not to foster the visibility administrative data or services, PNG can help to enhance the visualization and visibility of public administrations by providing content more visible and easy to read. In fact, the specification helps to store and to make images readable for the visualization of data of a public administration.

- **Reusability**
PNG is a business domain agnostic specification that can be reused in a cross-domain way. However, as an ISO standard, it has to be paid to access its content.

- **Technological neutrality and data portability**
The specification is independent of any technology and PNG images can be readable in any platform. Moreover, the specification is proportionate to the needs of its user. However, PNG is not related to data portability between systems and applications.

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

- **User-centricity**
The purpose of PNG is not related to the implementation of the once-only principle. Therefore, this criterion does not apply to this specification.

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

- **Security and privacy**
PNG is an image extension that allows visualizing and store images. However, they can not be protected with a password or something, everyone who has access to a PNG file can visualize it.

- **Multilingualism**
The purpose of PNG 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**
PNG is a file format that allows to save images digitally. Avoiding having paper images and fostering the digital services and information exchange, reduces the administrative burden.

- **Preservation of information**
Although PNG's purpose is not the long-term preservation of data, it can be used to store images digitally.

- **Assessment of effectiveness and efficiency**

No studies or documentation assessing PNG in terms of effectiveness and efficiency have been found.

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**
  9 Member States are recommending PNG in their ICT National Catalogues. Additionally, PNG is already associated with European Interoperability Reference Architecture (EIRA) ABBs in the European Library of Specifications (ELIS). More specifically, PNG can define the interoperability aspects of the "Representation" ABBs of the EIRA Semantic View. The specification is included within catalogues of standards at the national level but not at the EU level.

  There is no evidence of any cross-border project that use PNG nor explicit agreements involving the usage of the specification. Moreover, no tool has been found to assess the conformity of the implementations of the specification.

- **Integrated public service governance & Legal Interoperability**
  No evidence has 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 the specification with the European standardisation regulation has been found.

- **Organisational interoperability**
  PNG 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.

- **Semantic Interoperability**
  PNG defines a format extension to save an image, but does not define a cross-sector reusable data model. Moreover, it does not support the main principles for the publication of data as Linked Open Data.

- **Technical interoperability**
  This technical interoperability layer is covered by the core interoperability principle ''Openness''.

3. ASSESSMENT RESULTS

This section presents an overview of the results of the CAMSS assessments for **Portable Network Graphics (PNG)**. 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	100%	100%	1	0	0
Core interoperability principles	59%	89%	10	7	2
Principles related to generic user needs and expectations	0%	50%	0	2	2
Foundation principles for cooperation among public administrations	67%	100%	2	1	0
Interoperability layers*	35%	91%	7	13	2
Overall Score	48%	85%	16	17	6

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

With an 85% of assessment strength, this assessment can be considered representative of the specification compliance with the EIF principles and recommendations.

The Overall Automated Score of 48% demonstrates that the specification barely supports the European Interoperability Framework in the domains where it applies.
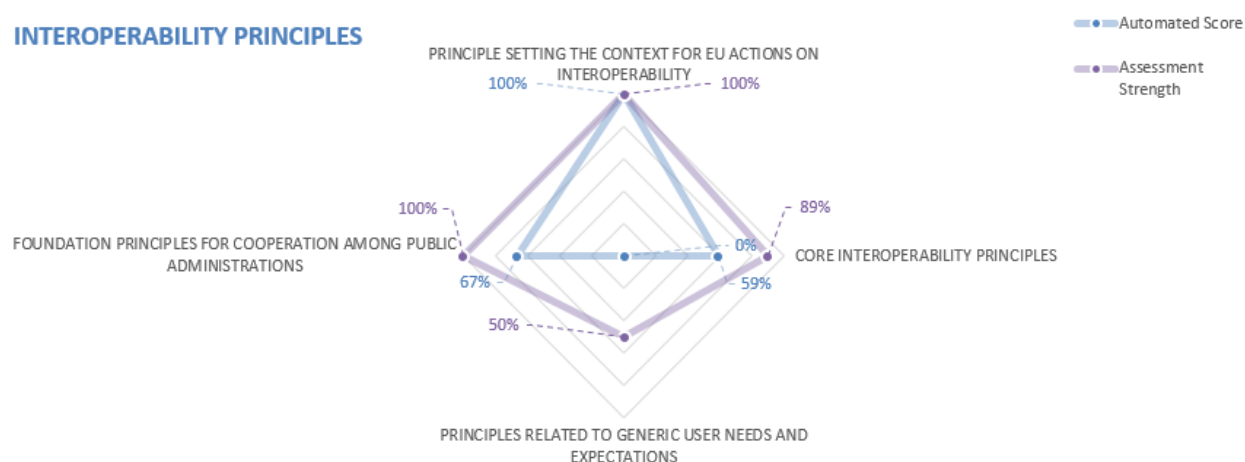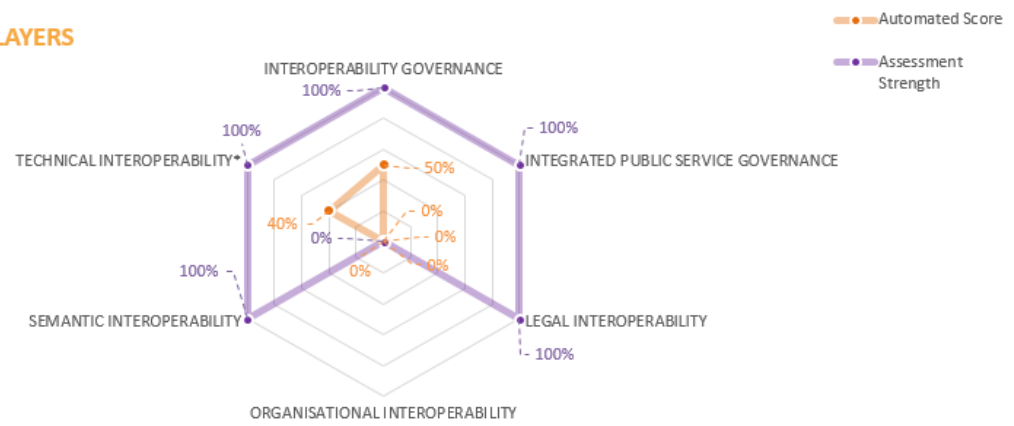

Figure 1. Interoperability principles Results

INTEROPERABILITY LAYERS

Figure 2. Interoperability layers Results