

CONVINcE

D6.1.1

Standardization Report #1

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1 EXECUTIVE SUMMARY

In the first year of CONVINCe project we have identified the relevant standardization bodies and followed those working groups that are relevant for the project. The relevant forums that we are following are MPEG, IETF and W3C in these there are small numbers of working groups that concentrate on energy aspects. TVN and Ericsson have related standardization activities that have been started already prior to CONVINCe but the results support the work carried out in CONVINCe project.

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2 DOCUMENT HISTORY AND ABBREVIATIONS

1.1 Document history

Version	Date	Description of the modifications
0.1	30.10.2015	Draft of ToC
1.0	12.11.2015	First version of the report
1.1	23.11.2015	Version after first review
1.2	4.12.2015	Version after comments from TVN
1.3	17.12.2015	Version after proof reading and spelling corrections

1.2 Abbreviations

GESI	Global e-Sustainability Initiative
ICE	Interactive Connectivity Establishment
IETF	Internet Engineering Task-Force
IRTF	Internet Research Task-Force
MMUSIC	Multiparty Multimedia Session Control
MPEG	Moving Picture Experts Group
W3C	World Wide Web Consortium

3 INTRODUCTION

Standardization efforts are an integral part of the commercialization strategy for the project. Without standards to back up the developed technology, any commercialization efforts run an increased risk of marginalization due to lack of market wide adoption. The standardization efforts will begin early in the project with identification of expected outcomes and organizations, which potentially are important to protect in standards form, both to secure a preference of using our developed solutions and to avoid being superseded by competing solutions. The bulk work though will be done closer to the end of the project when technically sound results have been reached that can be presented to the organizations responsible of defining the area.

1.3 Scope of the report

This report aims to collect the contributions made by the project partners helping us to identify at the end of the project the impact created in the standardization bodies. Also we have identified some standardization actions in this report that are done by the partners outside CONVINCe project.

4 POSSIBLE ORGANIZATIONS TO BE TARGETED

In the first year of the project, the standardization task has concentrated on identifying few key standardization bodies where the results from the CONVINCe project may be relevant. This list of organizations will be updated during second and third year as the results become more ready to be introduced as contributions to relevant standards.

1.4 Relevant Standardization Bodies

In the project, we have studied what are the related standardization bodies to follow up and contribute to. During the first year of the project the following organizations were identified as relevant.

- [IETF](#) and IRTF: Networking protocols and routing,
- [MPEG](#): Standards for coded representation of digital audio, video and related data,
- [W3C](#): Application layer protocols and web services.

IETF & IRTF

In the IETF the most relevant working groups are the ones considering multimedia and transport networking aspects. These groups are CoRE, ICE, mmusic, 6lo, and netvc. Mmusic and netvc are working groups that concentrate on the encoding and transport aspects of various media. ICE working group was split out from the MMUSIC working group in autumn 2015 as the interactive connectivity establishment procedure was identified to be useful in several use cases still the focus from CONVINCe is to follow how to save battery while keeping the reachability on the devices.

6lo is working on the routing aspect of power constrained devices which could be also of interest of CONVINCe project. CoRE working group is working on more lightweight application protocols for constrained devices that are designed to be low power and equipped with small batteries or even using energy harvesting. Techniques studied in CoRE may be useful even in the context of CONVINCe

IRTF is the research branch of the IETF and it looks more in to the future developments of networking protocols. Work that could be interesting from the CONVINCe perspective is the work carried out in Thing-to-Thing research group and Network Function Virtualization research group. The difference from regular IETF is that IRTF doesn't create industry standards rather aims explore technologies in the field and requirements for them.

MPEG

In MPEG the relevant work items that the project should follow are the future video coding done in the exploration area which looks in to the features which are needed for improved codecs.

W3C

In the W3C the identified groups are WebRTC and WoT. WebRTC is considering future developments of Web based communication protocols where energy aspects could be considered. In the WoT the goal is to accelerate the adoption of Web technologies as a basis for enabling services for the combination of the Internet of Things with rich descriptions of things and the context in which they are used.

1.5 Relevant Industry alliances

Relevant industry alliances that could be in the scope of CONVINCe project is [GESI](#). GESI is a leading source of impartial information, resources and best practices for achieving integrated social and environmental sustainability through ICT. GESI partners use their collective knowledge and experience to identify opportunities and develop solutions for improving energy and resource efficiency, reducing carbon emissions and footprints, ensuring sustainable practices in the supply chain, encouraging access to sustainable technologies, and supporting ICT-enabled transformation across all industries and sectors around the globe. Ericsson who is part of the CONVINCe project is also one of the founding members of GESI.

It is also envisaged that CONVINCe becomes a member of [TCGCC](#) (IEEE Technical Committee on Green Communications and Computing). The goal of TCGCC, is to provide a platform for its members, and the whole research, development, standardization, and service community of energy- and/or resource- efficient and/or environment-sustainable communications, computing, and relevant systems. This committee not only addresses greening communications, computing, and relevant systems but also investigate using communications, computing, and relevant systems to achieve green objectives for the sustainable world.

[Green Touch](#) organization was also considered. However, it appears that it stopped working in 2015. Two Green Touch tools (GWATT and Flexible Power Model) were evaluated by CEA to check if they could be used by CONVINCe. The result was disappointing: "The results are hypothetical. There is little relationship with real-world phenomena, and the analysis is very coarse-level".

1.6 Partners' relevant Standardization actions outside CONVINCe

TVN will report to CONVINCe partners on the work done by TVN on [Green Metadata](#)¹ and more generally progress of this Working Group that TVN is co-chairing. The work done by TVN is funded by a national French project (Green Video). Standard referenced as ISO/IEC 23001-11 Green Metadata reached the FDIS (Final Daft stage before final publication) milestone at the 110th MPEG meeting in October 2014.

Ericsson (Ari Keränen) has been co-chairing the IETF mmusic WG at IETF that is related to the work done in CONVINCe and that could be a possible dissemination of project results during the second and third year of the project. In this working group, various media transport aspects are discussed and the focus of Ericsson has been the Interactive Connectivity Establishment and enhancements on the protocol. In battery powered devices, the existence of address translators is an issue and sending keep-alive messages should be done as seldom as possible with still maintaining the reachability.

5 CONTRIBUTIONS TO RELEVANT STANDARDS

No contribution from CONVINCe partners to relevant standards in the 1st half of the project.

6 PARTICIPATION TO THE RELEVANT STANDARDIZATION EVENTS

	Standardization organization	Location	Date	Involved Partners	Activities in working groups/tasks
(1)	MPEG	Strasbourg	October 2014	TVN	Green Metadata

¹ For more information on Green video, please see : <http://online.qmags.com/MM0115?sessionID=4D9E3762BEFB2C86014AA8D0C&cid=3204101&eid=19247#pg1&mode2> , pages 80 -87.

(2)	MPEG	Geneva	February 2015	TVN	Green Metadata
(3)	MPEG	Warsaw	June 2015	TVN	Green Metadata
(4)	MPEG	Geneva	October 2015	TVN	Green Metadata
(5)	90 th IETF	Toronto	July 2014	Ericsson	MMUSIC & CoRE & ROLL
(5)	91 st IETF	Honolulu	November 2014	Ericsson	MMUSIC & CoRE & ROLL
(6)	92 nd IETF	Dallas	March 2015	Ericsson	MMUSIC & CoRE & ROLL
(7)	93 rd IETF	Prague	July 2015	Ericsson	MMUSIC & CoRE & ROLL
(8)	94 th IETF	Yokohama	November 2015	Ericsson	ICE & CoRE & ROLL

7 CONCLUSIONS

During first execution year of the project, no direct contributions were made to the standards. Some possible contributions were identified towards the IETF and W3C related to the WebRTC protocol stack and API. CONVINCe project will continue to work further by following up the work done by the relevant standardization bodies and by identifying results that could contribute to the work carried out by these organizations.

8 ANNEX

1.7 Partners Commitments on this Activity

Based on the final proposal of the project, initial plans for standardization are given below.

Partner name	Standardization plan
Orange Labs	Orange Labs doesn't plan to actively participate on the standardization work done. Dissemination will be done in the form of publications.
University of Oulu	UO intends to contribute to standardization in standardization bodies, such as IETF.
Ericsson	Ericsson intends to contribute to standardization in standardization bodies, such as IETF and W3C. We also intend look and apply for relevant positions (such as WG chair position) in relevant standardization.
BTH	Our future results will provide input to relevant European and international standardization bodies like, e.g., the European Telecommunication Standards Institute (ETSI), the Telecommunications Standardization sector of the International Telecommunication Union (ITU), the Institute of Electrical and Electronics Engineers (IEEE), Association for Computing Machinery (ACM). Participation to these activities may include, e.g., drafting of contributions to different proposals, participation in meetings of appropriated interest, participation in appropriated mailing lists. We expect that our future results will impact the work in the standards domain.
Thomson Video Networks	TVN will report to CONVINCe partners the work done by TVN on Green Metadata and more generally progress of this Working Group. TVN will not work directly from CONVINCe on this subject but as it is related TVN will inform the partners on the progress.