ETSI GS ENI 006 V1.1.1 (2018-05)



Experiential Networked Intelligence (ENI); Proof of Concepts Framework

Disclaimer

The present document has been produced and approved by the Experiential Networked Intelligence (ENI) ETSI Industry Specification Group (ISG) and represents the views of those members who participated in this ISG.

It does not necessarily represent the views of the entire ETSI membership.

Reference DGS/ENI-006

Keywords

interoperability, proof of concept, testing

ETSI

650 Route des Lucioles F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C Association à but non lucratif enregistrée à la Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from: <u>http://www.etsi.org/standards-search</u>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx

If you find errors in the present document, please send your comment to one of the following services: https://portal.etsi.org/People/CommitteeSupportStaff.aspx

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2018. All rights reserved.

DECTTM, **PLUGTESTS**TM, **UMTS**TM and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP**TM and **LTE**TM are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M logo is protected for the benefit of its Members. **GSM**® and the GSM logo are trademarks registered and owned by the GSM Association.

Contents

Intelle	llectual Property Rights	5
Forev	eword	5
Moda	dal verbs terminology	5
1	Scope	6
2	References	6
2.1	Normative references	
2.2	Informative references	
3	Definitions and abbreviations	7
3.1	Definitions	7
3.2	Abbreviations	7
4	ENI ISG PoC Framework	8
4.1	Rationale	8
4.2	Call for PoCs	
4.3	ENI ISG PoC Proposal Submission	
4.4	ENI ISG PoC Proposal Review	
4.4.1		
4.4.2	r	
4.4.3	J	
4.5 4.6	ENI ISG PoC Proposal Acceptance Criteria ENI ISG PoC Report	
5	Overall Roles and Activities within PoCs	
5 5.1	General	
5.2	ETSI CTI Role	
5.3	Other roles and responsibilities	
5.4	PoC activity process	
Anne	nex A (normative): ENI ISG - PoC Proposal Template	13
A.1		
A.1.1	· ·	
A.1.2		
A.1.3		
A.1.3.	3.1 PoC Goals	13
A.1.3.	3.2 PoC Topics	13
A.1.3.	- · · · · · · · · · · · · · · · · · · ·	
A.1.4	, E	
A.1.5	5 Additional Details	14
A.2	PoC Technical Details	14
A.2.1	1 PoC Overview	14
A.2.2		
A.2.3		
A.2.4	4 Additional information	15
Anne	nex B (normative): ENI ISG PoC Report Template	16
B.1	General	16
B.2	ENI ISG PoC Report	16
B.2.1	<u>*</u>	
B.2.2		
B.2.3		
B.2.4	1	
B.2.5	5 PoC Feedback Received from Third Parties (Optional)	17
B.3	ENI PoC Technical Report (Optional)	17

B.3.1	General	17
B.3.2	PoC Contribution to ENI ISG.	17
B.3.3	Gaps identified in ENI standardization	17
B.3.4	PoC Suggested Action Items	17
	Additional messages to ENI	
	Additional messages to Network Operators and Service Providers?	
History .		19

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

Foreword

This Group Specification (GS) has been produced by ETSI Industry Specification Group (ISG) Experiential Networked Intelligence (ENI).

Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the <u>ETSI Drafting Rules</u> (Verbal forms for the expression of provisions).

"must" and "must not" are NOT allowed in ETSI deliverables except when used in direct citation.

1 Scope

The present document specifies a framework for use within ETSI ENI ISG to coordinate and promote public demonstrations of Proof of Concept (PoC) validating key technical components developed in ENI.

The objective for the PoCs is to build commercial awareness and confidence and encourage development of an open ecosystem by integrating components from different players.

This framework outlines:

- rationale for ENI ISG PoCs;
- ENI ISG PoC process;
- submission, format and criteria for ENI ISG PoC Proposals;
- review and acceptance criteria of PoC Proposals;
- ENI ISG PoC Report format and requirements;
- ETSI support for PoC team.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

- [1] ETSI GS ENI 002: "Experiential Networked Intelligence (ENI); ENI requirements".
- [2] ETSI Directives (March 2018).

NOTE: Available at https://portal.etsi.org/directives/38_directives_feb_2018.pdf.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI GS ENI 005: "Experiential Networked Intelligence (ENI); System Architecture".
- [i.2] ETSI GR ENI 004: "Experiential Networked Intelligence (ENI); Terminology for Main Concepts in ENI".

[i.3] ETSI GR ENI 001: "Experiential Networked Intelligence (ENI); ENI use cases".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document the terms and definitions given in ETSI GR ENI 004 [i.2] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in ETSI GR ENI 004 [i.2].

ENI ISG PoC proposal: initial description of a PoC Project, submitted as a contribution for review and acceptance by the ENI ISG before the PoC Project starts

NOTE: See annex A.

ENI ISG PoC report: detailed description of the results and findings of a PoC project, submitted once the PoC Project has finished

manufacturer: company having a substantial capacity to develop and/or produce and/or install and/or maintain products to be used in, or directly or indirectly connected to, an electronics communications network

NOTE: An association or organization of such manufacturers also falls within this category. (Member categories from Rules of procedure in ETSI Directives [2]).

network operator: operator of an electronics communications network or part thereof

NOTE: An association or organization of such network operators also falls within this category. (Member categories from Rules of procedure in ETSI Directives [2]).

PoC demo objective: detailed description of one particular aspect that the PoC Team intends to demonstrate and how it will be achieved

PoC project: activity oriented to perform a PoC according to the framework described in the present document

PoC review team: entity in charge of administering the PoC activity process

PoC scenario report: collection of PoC Demo Objectives

NOTE: See annex B.

PoC team: organizations participating in the PoC Project

service provider: company or organization, making use of an electronics communications network or part thereof to provide a service or services on a commercial basis to third parties

NOTE: An association or organization of such service providers also falls within this category. (Member categories from Rules of procedure in ETSI Directives [2]).

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AI Artifical Intelligence EG Expert Group

ENI Experiential Network Intelligence

IDC Internet Data Centre

IP Internet ProtocolISG Industry Specification Group

PoC Proof of Concept

SD-WAN Software Defined - Wide Area Network

URL Universal Resource Location

WG Working Group

4 ENI ISG PoC Framework

4.1 Rationale

The ENI system is an innovative, policy-based, model-driven functional entity that improves operator experience. It does not just address automation, but rather, assists decision-making of humans as well as machines, to enable the system to be more maintainable, reliable, and provide context-aware services that meet the needs of the business. Proof of Concepts are an important tool to demonstrate ENI as a viable technology. Results from PoCs may guide the work in the ENI ISG by providing feedback on interoperability and other technical challenges. The public demonstration of these ENI concepts helps to build commercial awareness and confidence in this ENI approach, and helps to develop a diverse, open, ENI ecosystem. Any given PoC demonstration event impacts its immediate audience, but the cumulative set of PoC demonstration events provides a measure of industry impact from these ENI concepts.

The PoCs shall be scoped taking the ENI use cases as a working basis and address the technical challenges and approaches being progressed.

4.2 Call for PoCs

The ETSI ENI ISG calls for PoC proposals during the life of the ISG. Details will be made publicly available on the ETSI ENI ISG portal.

4.3 ENI ISG PoC Proposal Submission

PoC Team formation is beyond the scope of the ENI ISG. The PoC Team shall prepare an ENI ISG PoC Proposal according to the ENI ISG PoC Proposal template in clause A.1. The PoC Proposal shall be submitted to the ENI ISG as a contribution uploaded on the ETSI Portal and a link to the contribution shall be sent by the ENI PoC Review Team to the dedicated e-mail distribution list 'ISG_ENI@LIST.ETSI.ORG' with [ENI ISG PoC Proposal] in the subject line.

4.4 ENI ISG PoC Proposal Review

4.4.1 General

The ENI PoC Review Team is responsible for administering this ENI ISG PoC process. The ENI PoC Review Team shall collect and distribute the ENI ISG PoC Proposals and announce the accepted ENI ISG PoC Proposal based on the review against the ENI ISG PoC acceptance criteria of clause 4.5.

ETSI Centre for Testing and Interoperability (CTI) will further evaluate the PoC according to the criteria acceptance principles and provide the ENI PoC Review Team with a confirmation of meeting the acceptance criteria (as in clause 5.1) as required by clause 4.5.

The ENI PoC Review Team will provide a response to the PoC Team within 30 days after receipt of the ENI ISG PoC proposal.

4.4.2 Accepted ENI ISG PoC Proposals

The ENI PoC Review Team will send an email to the PoC Team to confirm the acceptance of the ENI ISG PoC Proposal.

The ENI PoC Review Team will send an email to the 'ENI_POC@LIST.ETSI.ORG' list to announce each accepted ENI ISG PoC Proposal to the ENI ISG community. Keep a "List of Accepted Proposals" on the ETSI ENI Wiki page.

The ENI PoC Review Team will post accepted ENI ISG PoC Proposals on a publicly accessible ETSI ENI ISG portal.

Accepted ENI ISG PoC Proposals are expected to be executed by the PoC Team and a PoC Report is also expected to be submitted by the PoC Team at completion.

4.4.3 Rejected ENI ISG PoC Proposals

The ENI PoC Review Team will send an email to the PoC Team to notify them that the ENI ISG PoC Proposal has been rejected with the reason based on the criteria of clause 4.5.

No further action will be taken by the ENI ISG on rejected proposals. PoC Teams may submit revised ENI ISG PoC Proposals for future consideration.

NOTE: This should be reported to the ENI management list and informally to the next meeting.

4.5 ENI ISG PoC Proposal Acceptance Criteria

The criteria for acceptance of ENI ISG PoC Proposals are:

- 1) The ENI ISG PoC Proposal shall contain the information requested in the format of the ENI ISG PoC Proposal Template of clause A.1, referred to as the PoC Team. This will be checked by ETSI CTI and the PoC Review Team.
- 2) The organizations participating in an PoC Team shall include at least two Manufacturers and at least one Network Operator or one Service Provider, where at least one Network Operator or one Service Provider shall be a member of the ENI ISG (refer to clause A.1.1).
- The ENI ISG PoC Team proposal shall address at least one goal relevant to ENI i.e. related with an ENI Use Cases [i.3], an ENI Requirements [1] or the suitability of an ENI System Architecture [i.1] aspect (refer to clause A.1.3.1). The output of the PoC should provide feedback to the ISG ENI that should support the improvement of the output of the existing WIs. Alignment with existing activities is required.
- 4) The ENI ISG PoC Team proposal shall indicate the venue where the PoC will be demonstrated (e.g. PoC Team member lab, industry trade show, etc.) (refer to clause A.1.5).
- 5) A PoC Team project timeline shall be provided (refer to clause A.1.4).

Any ENI ISG PoC Proposal which meets these required elements will be accepted.

A summary table of Use cases from [i.2] and requirements [i.3] is shown in the table 1.

Table 1: Summary of the ENI Use Cases and Requirements

	Level 1	Level 2
Use Case	Network Operations	Policy-driven IP managed networks
		Radio coverage and capacity optimization
		Intelligent software rollouts
		Policy-based network slicing for IoT security
		Intelligent fronthaul management and orchestration
	Service Orchestration and Management	Context aware VoLTE service experience optimization
		Intelligent network slicing management
		Intelligent carrier-managed SD-WAN
	Network Assurance	Network fault identification and prediction
		Assurance of service requirements
		Policy-driven IDC traffic steering
		Handling of peak planned occurrences
		Energy optimization using AI
Requirement	ement Service and network requirements	General requirements
		Service orchestration and management
		Network planning and deployment
		Network optimization
		Resilience and reliability
		Security and privacy
	Functional requirements	Data Collection and Analysis
		Policy Management
		Data Learning
		Interworking with Other Systems
	Non-functional requirements	Performance requirements
		Operational requirements
		Regulatory requirements
		Non-functional policy requirements

4.6 ENI ISG PoC Report

Once an ENI ISG PoC Team project is concluded, a ENI ISG PoC Report with the PoC results is expected to be provided to ENI ISG as a contribution to an ISG ENI face to face meeting or be announced on the 'ISG_ENI@list.etsi.org' mailing list. A PoC Wiki section of the ETSI portal via a link on the ENI home page will also indicate this report.

An ENI ISG PoC Report should contain the information requested in the ENI ISG PoC Report Template of clause B.1 to notify the ENI ISG that the PoC Team has completed their PoC Project. PoC Teams are encouraged to provide additional technical details on the results of their PoC Project using the report format provided in clause B.2.

The ENI PoC Review Team will present a list of all the ENI ISG PoC Reports to the ISG Plenary after proper evaluation of contents.

PoC Team members who are participants of ISG ENI may bring technical proposals based on PoC results to ENI ISG as regular contributions.

5 Overall Roles and Activities within PoCs

5.1 General

ENI ISG participants activities when forming PoC Teams and executing PoC Projects are outside the scope of the ENI ISG. The ENI ISG shall not manage individual PoC Projects nor get involved in forming PoC Teams or executing ENI ISG PoC Proposals.

5.2 ETSI CTI Role

The ETSI Centre for Testing and Interoperability (CTI) has experience in supporting the organization of technology evaluations and interoperability events (in many ways similar to PoCs). This experience may be useful in assisting the PoC Teams with administration and project management support including:

- Formation of the PoC Team
- Preparation of the ENI ISG PoC proposal
- Development of the ENI ISG PoC Scenario Report
- Collecting and reporting results in a PoC Report
- Providing feedback to the ISG
- Administration, logistics, etc.

CTI is not a test lab. CTI assistance is free of charge for ISG participants. ISG participants may request CTI assistance by contacting 'CTI Support@etsi.org' by email where the subject should include [ENI ISG PoC].

PoC Team members are not required to make use of CTI support. Other ISG members or commercial entities may provide additional or similar services.

5.3 Other roles and responsibilities

ENI ISG: The ENI ISG is interested in the outcome of the PoC projects. In the context of the PoC framework, it is in charge of:

- identifying PoC topics;
- identifying expected contributions and timelines for PoC topics;
- processing the contributions made by the PoC teams on those topics.

PoC Review Team: Entity in charge of administering the PoC activity process. It is in charge of:

- maintaining and making available the PoC topics;
- reviewing PoC proposals and PoC reports against the acceptance criteria;
- declaring the acceptance/refusal of each PoC;
- notifying acceptance/refusal of each PoC in the ENI POC@list.etsi.org' mailing list;
- compiling the accepted PoC Proposals and Reports and making them available to the ENI ISG;
- monitoring the PoC project timelines, and sending the appropriate reminders to the PoC teams (for expected contributions, PoC report, etc.).

PoC Team: Group of organizations participating in one PoC project. The PoC Team is in charge of:

- writing the PoC proposal;
- executing the PoC and collecting the relevant data;
- writing the PoC report.
- submitting the expected contributions to the ISG ENI.

5.4 PoC activity process

Figure 1 provides a description of the PoC activity process.

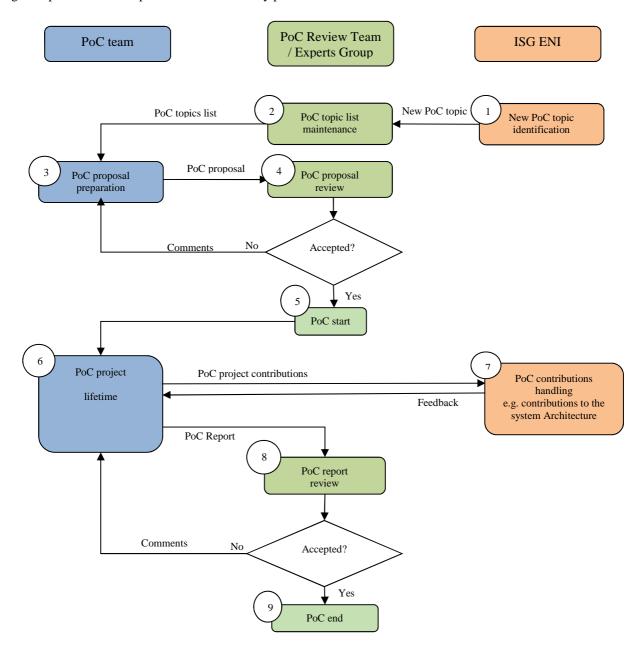


Figure 1: PoC Activity Process 1

Annex A (normative): ENI ISG - PoC Proposal Template

A.1 PoC Project Details

A.1.1 PoC Project

PoC Number (assigned by ETSI):

PoC Project Name:

PoC Project Host:

Short Description:

A.1.2 PoC Team Members

Table A.1

	Organization name	ISG ENI participant (yes/no)	Contact (Email)	PoC Point of Contact (see note 1)	Role (see note 2)	PoC Components
1						
2						
3						

NOTE 1: Identify the PoC Point of Contact with an X.

NOTE 2: The Role will be network operator/service provider, infrastructure provider, application provider or other as given in the Definitions of ETSI Classes of membership.

All the PoC Team members listed above declare that the information in this proposal is conformant to their plans at this date and commit to inform ETSI timely in case of changes in the PoC Team, scope or timeline.

A.1.3 PoC Project Scope

A.1.3.1 PoC Goals

A.1.3.2 PoC Topics

EXAMPLE: The PoC will demonstrate at least one use case of [...] and report on the suitability of the ENI Refence Architecture ETSI GS ENI 005 as described in clause 4.x.x bullet x.

PoC Topics identified in this clause need to be taken for the PoC Topic List identified by ISG ENI and publicly available, i.e. the three topics identified in clause 4.5 of the ENI PoC Framework. PoC Teams addressing these topics commit to submit the expected contributions in a timely manner.

Table A.2

PoC Topic Description	Related WI	Expected Contribution	Target Date

A.1.3.3 Other topics in scope

List here any additional topic for which the PoC plans to provide input/feedback to the ISG ENI.

Table A.3

PoC Topic Description	Related WI	Expected Contribution	Target Date

A.1.4 PoC Project Stages/Milestones

Table A.4

PoC Milestone	Stages/Milestone description	Target Date	Additional Info
P.S	PoC Project Start		
P.D1	PoC Demo 1		Venue, F2F / Webinar
P.D1	PoC Demo 1		Venue, F2F / Webinar
P.C1	PoC Expected Contribution 1		
P.C2	PoC Expected Contribution 2		
P.R	PoC Report		
P.E	PoC Project End		

NOTE: Milestones need to be entered in chronological order.

A.1.5 Additional Details

For example, URL, planned publications, conferences, etc.

A.2 PoC Technical Details

A.2.1 PoC Overview

Describe the PoC here.

A.2.2 PoC Architecture

Include a schema outlining how the different PoC components fit in the PoC architecture.

A.2.3 PoC Success Criteria

Explain how the proposal intends to verify that the goals are presented in clause A.1.2 have been met.

EXAMPLE: Functional (it worked, it did not work), Performance(transactions per second, throughput, processing per second, packet per second, etc.), Scalability, Availability, Service Quality.

A.2.4 Additional information

Include additional information as useful.

Annex B (normative): **ENI ISG PoC Report Template**

B.1 General

The following normative disclaimer shall be included on the front page of a PoC report:

Submission of this ENI ISG PoC Report as a contribution to the ENI ISG does not imply any endorsement by the ENI ISG of the contents of this report, or of any aspect of the PoC activity to which it refers.

ENI ISG PoC Report B.2

PoC Project Completion Status B.2.1

Indicate the PoC Project Status. Can the PoC be considered completed? If this is a multi-stage PoC project, indicate the Reported Stage status and plans for future Project Stages/Milestones.

Overall PoC Project Completion Status:	
PoC Stage Completion Status (Optional - for Multi State	age projects only):
B.2.2 ENI PoC Project Participant	S
Specify PoC Team; indicate any changes from the ENI ISG Po	C Proposal:
PoC Project Name:	
Network Operator/Service Provider:	Contact:
Manufacturer A:	Contact:
Manufacturer B:	Contact:
Additional Members:	Contact:
B.2.3 Confirmation of PoC Event	Occurrence
To be considered complete, the PoC should have been physical demonstration has taken place.	ly demonstrated with evidence provided that the
Provide details on venue and content of PoC demonstration ever available. Please identify who was present at the demonstration	
PoC Demonstration Event Details:	

B.2.4 PoC Goals Status Report

Specify PoC Goals from ENI ISG PoC Proposal (clause A.1.2). Identify any changes from the original ENI ISG PoC Proposal with an explanation as to why the changes were made. Indicate the extent that each goal was met. Provide sufficient information for those not familiar with the PoC goals to understand what has been achieved and/or learned.

 PoC Project 	ct Goal #1:	Goal Status (Demonstrated	/Met?)
---------------------------------	-------------	---------------------------	--------

List additional (optional) PoC Project Goals (follow the same format).

B.2.5 PoC Feedback Received from Third Parties (Optional)

• Where applicable, provide in a free text, feedback received from potential customers, Ecosystem partners, event audience and/or general public.

B.3 ENI PoC Technical Report (Optional)

B.3.1 General

PoC Teams are encouraged to provide technical details on the results of their PoC using the PoC Scenario Report template below.

B.3.2 PoC Contribution to ENI ISG

Use table B.1 to list any contributions to the ENI ISG resulting from this PoC Project.

Table B.1

Contribution	WG/EG	Work Item (WI)	Comments
Xxxxxx		ETSI GR ENI 001	i.e. "New test proposal covering a
			different type of workload and
			proposing additional parameters for the
			portability templates"
Yyyyy			i.e. "New WI proposal addressing"

B.3.3 Gaps identified in ENI standardization

Use table B.2 to indicate Gaps in standardization identified by this PoC Team including which forum(s) would be most relevant to work on closing the gap(s). Where applicable, outline any action(s) the ENI ISG should take.

Table B.2

Gap Identified	Forum (ENI ISG, Other)	Affected WG/EG	WI/Document Ref	Gap details and Status
Xxxxx	ENI		ETSI GR ENI 001	i.e. "The PoC demonstrated that Dynamic reconfiguration of Service Chain as defined in xxx does not address the needs of vMME implementation. Gap is addressed by Mano WG"
Yyyyy				

B.3.4 PoC Suggested Action Items

Provide suggested Action Items and/or further work required from the ENI ISG and/or external forums.

B.3.5 Additional messages to ENI

 Provide any feedback in a free text format to the ENI ISG. Please indicate whether the team wishes any specific message to be published or publicly quoted.

B.3.6 Additional messages to Network Operators and Service Providers?

• Are there any specific requests/messages that the team would like to convey to Network Operators and Service Providers?

History

Document history		
V1.1.1	May 2018	Publication