



Welcome to the World of Standards



STF 455 – ETSI ITS WORKSHOP BERLIN

Berlin, February 2014. Presented by leader of STF 455, Dr. Hans-Joachim Fischer

This presentation:



This presentation was offered to ETSI to be given at the ITS workshop in Berlin.

Although the presentation is on work done at ETSI, and although this work is funded by the EC under mandate M/453, the presentation was not accepted.

Thus this presentation is made available for download. At the workshop, only an oral reference is made to this presentation.

STF 455 *Platform for Conformance Testing of Cooperative Intelligent Transport Systems (C-ITS) protocols operated in a Bounded, Secure Managed Domain (BSMD)* is funded under EC/EFTA contract SA/ETSI/ENTR/453/2012-04

STF 455 finalizes and validates test suites for ISO C-ITS Release 1 communication standards:

- ✓ ISO 29281-1: Fast Networking & Transport Layer Protocol (FNTP)
- ✓ ISO 24102-5: Fast Service Advertisement Protocol (FSAP)
- ✓ ISO 24102-4: ITS station-Internal management Communications Protocol (IICP)
- ✓ ISO 21218: Access technology support protocols (ATSP)

STF 455 – Contractual Milestones Status



Mil	Description	Cut-off date
A	Progress Report#1 on status of Tasks 2 to 6 presented for preliminary review to ITSWG2#22 (9 Apr 2013) and for approval to ITS#12 (11-12 Apr 2013).	12-Apr-2013
B	Progress Report#2 on status of Tasks 2 to 6 presented for review to ITSWG2#23 (18 June 2013).	18-Jun-2013
C	Progress Report#3 referring of successful conclusion Tasks 2 to 6 presented for preliminary review to ITSWG2#24 (22 Oct 2013) and for approval to ITS#13 (24-25 Oct 2013).	25-Oct-2013
D	Interim Report to be approved by EC/EFTA. The Interim Report must be provided by the STF Leader to the ETSI Secretariat before 1-Nov-2013. The deadline for delivery to EC/EFTA by the ETSI Secretariat is 30-Nov-2013; EC/EFTA approval is expected before mid-January 2014 (45 days after reception).	31 Oct 2013
E	Progress Report#4 and stable drafts of DTS/ITS-0020021, DTR/ITS-0020050 and DTR/ITS-0020048 reviewed by ITSWG2#25 and ITS#14 (Jan-2014).	Jan-2014
F	Progress Report#5 and final drafts of DTS/ITS-0020021, DTR/ITS-0020050 and DTR/ITS-0020048 approved by ITSWG2#26 and reviewed by ITS#15 (Apr-2014), before AbC. The final draft for TC ITS approval must be uploaded by the STF Leader on the TB contributions area of the ETSI Portal before 30 April 2014. Up to 10% of the total contractual amount may be withheld until milestone H (approval of Final Report by EC/EFTA) is achieved.	Apr-2014
G	Final draft of DTS/ITS-0020021, DTR/ITS-0020050, DTR/ITS-0020048 approved by TC ITS before 31 May 2014 and accepted by the ETSI Secretariat for publication.	31 May 2014
H	All ETSI deliverables required in the ToR published and Final Report approved by EC/EFTA. The Final Report must be delivered by the STF Leader to the ETSI Secretariat before 1 June 2014. The deadline for delivery to EC/EFTA by the ETSI Secretariat is 30 June 2014; EC/EFTA approval is expected before mid-August 2014 (45 days after reception).	30 Jun 2014

STF 455 – Members



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- The implementations of FNTTP and FSAP from Commsignia and Peek Traffic passed successfully all tests for the implemented options.
- First tests of IICP started.
As IICP is used as transport protocol between ITS test system and SUT, every test of FSAP and FNTTP implicitly tested also IICP.
- Tests on ATSP did not start yet, as the implementations are not ready. Commsignia's implementation is expected to be ready to perform tests within the given schedule of STF 455.


- Required draft deliverables D1, D2 and D3 exist:
 - D1: TS 102 760 part 3: ISO 21218 ATS and partial PIXIT.
 - D2: TR 103 101 "Intelligent Transport Systems (ITS); Test suite validation; Access technology support ISO 21218 "
 - D3: TR 101 611 "Intelligent Transport Systems (ITS); Test suite validation; CALM Fast services "


- Other deliverables (to be provided by ETSI TC ITS WG2) exist:
 - Revision of TS 102 797 FSAP test specification. All three parts.
 - Revision of TS 102 985 FNTF test specification. All three parts.
 - Revision of TS 102 760 ATSP test specification. Parts 1 and 2.

After Milestone E:

- Implementation of ATSP early in 2014 by Commsignia
- Tests of ATSP and IICP early in 2014
- Attendance at the IEEE / ISO harmonization workshop for FNTF and FSAP in Berlin in February 2014
- Attendance at ETSI ITS workshop in Berlin in February 2014
We did not get a time slot for a presentation!
- Attendance at the Converge Workshop in Berlin in February 2014
- Mission to CEN TC278 WG16 in Berlin in February 2014
- Mission to ISO TC204 WG16 in Norway in May 2014
- Finalization of all deliverables in due time for Milestone F
- Final reports and closing of project in due time


-  Report from IEEE 1609 WG meeting in Los Angeles
 - 1609 WG approved a Straw Poll "*This IEEE 1609 working group believes that ISO and IEEE should develop an identical frame format for the purpose of creating modified versions of WSMP and FNTP.*"
Yes: 10, No: 0, Abstain: 2
 - Several proposals on how to harmonize WSMP with FNTP were presented and discussed. The editors of WSMP and FNTP work on a harmonized proposal for the meeting in January in Austin / Texas.
 - Harmonization of FSAP with WSA was not discussed so far. Will be major topic on the agenda of the meeting in January in Austin / Texas.
 - Using ASN.1 to specify the message format, upgrade of ETSI STF 455 work is possible within short time allowing for conformance tests of a harmonized solution in Q3/2014 and subsequent plug tests, assuming an agreement is achieved in Berlin.

-  Report from ISO TC204 WG16 meeting in San Diego
 - A favorite harmonized solution for FNTTP / WSMP was identified.
 - Using ASN.1 to specify the message format, upgrade of ETSI STF 455 work is possible within short time allowing for conformance tests of a harmonized solution in Q3/2014 and subsequent plug tests, assuming an agreement is achieved in Berlin.

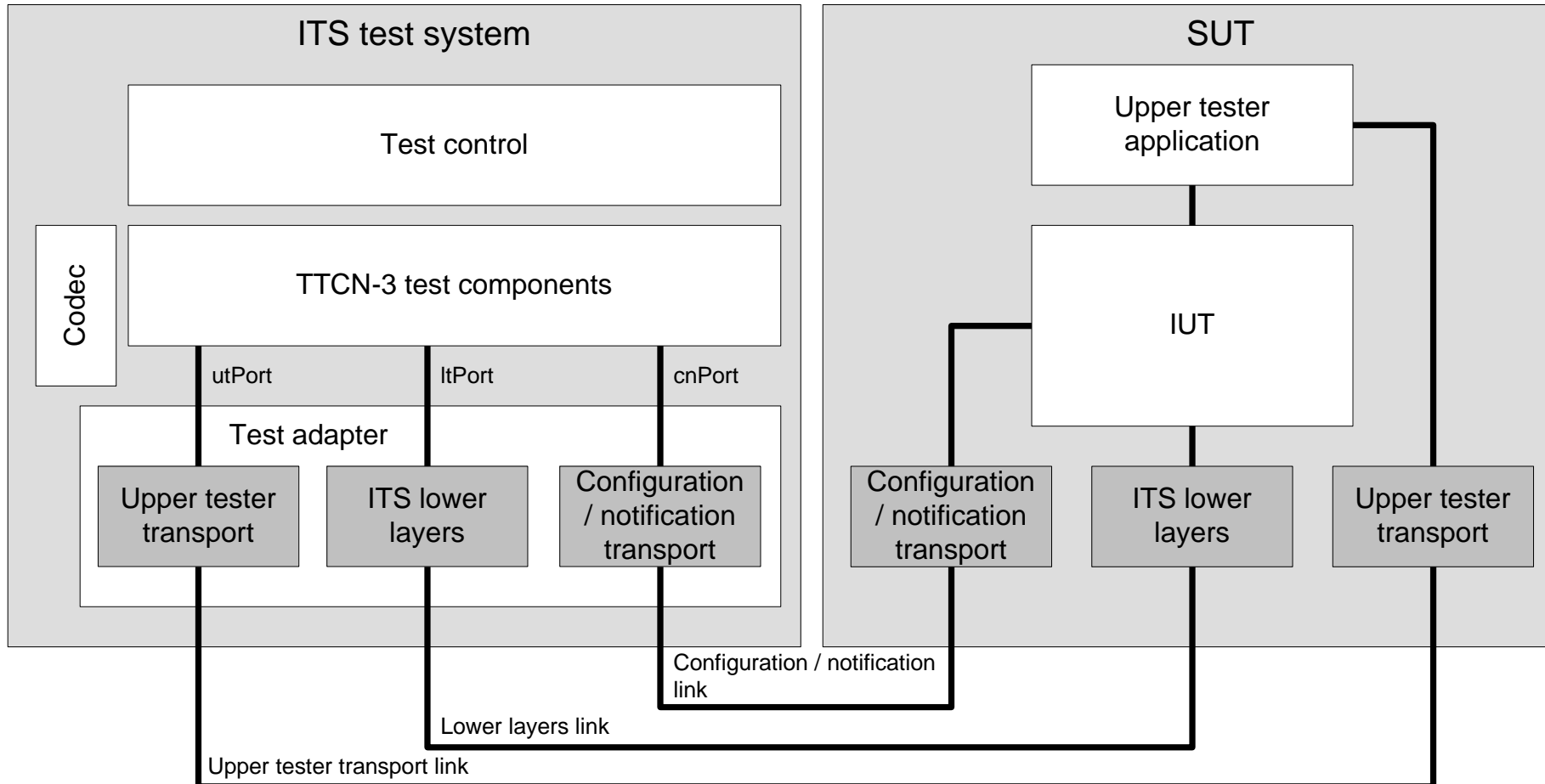
-  Report from IEEE 1609 WG meeting in Austin
 - A single proposal on how to harmonize FSAP with WSA was presented.
 - Further work on a harmonized solution will be at the harmonization workshop in February in Berlin / Germany.
 - Using ASN.1 to specify the message format, upgrade of ETSI STF 455 work is possible within short time allowing for conformance tests of a harmonized solution in Q3/2014 and subsequent plug tests, assuming an agreement is achieved in Berlin.

- AT the ETSI CTI PlugTest on C-ITS in Essen, STF 455 presented its work and the methodology of testing.
- Stakeholders were interested in the approach to use IICP (ISO 24102-4) as a standardized way to connect the ITS test system (test PC) with the System Under Test (SUT) containing the Implementation Under Test (IUT).

- Online repositories for ASN.1 modules (registry: dynamic update of class members):
 - ISO 29281-1
 - ISO 24102-5 and -4, -3, -1
 - ISO 21218
 - ISO 21210
- ISO registry for
 - ITS-AID (joint approach with IEEE)
 - ITS port numbers

-  ETSI ITS [test platform](#).
 - created initially for ETSI C-ITS base standards: [STF 424](#)
 - extended for ISO C-ITS communications base standards: [STF 422](#), [STF 455](#)
 - ISO 21218: Access Technology Support
 - ISO 24102-4: ITS station-internal management communications protocol (IICP)
 - ISO 24102-5: ITS fast service advertisement protocol (FSAP)
 - ISO 29281-1: ITS Fast networking & transport layer protocol (FNTP)
 - to be further extended for C-ITS applications and communications from all SDOs
 - ISO 21210, ISO 16789, ISO 18378, ISO 18380, ISO 16788: IPv6 for C-ITS
 - ISO 16444: Geo-dissemination of information
 - applicable in general for C-ITS.

C-ITS test architecture (STF 455)



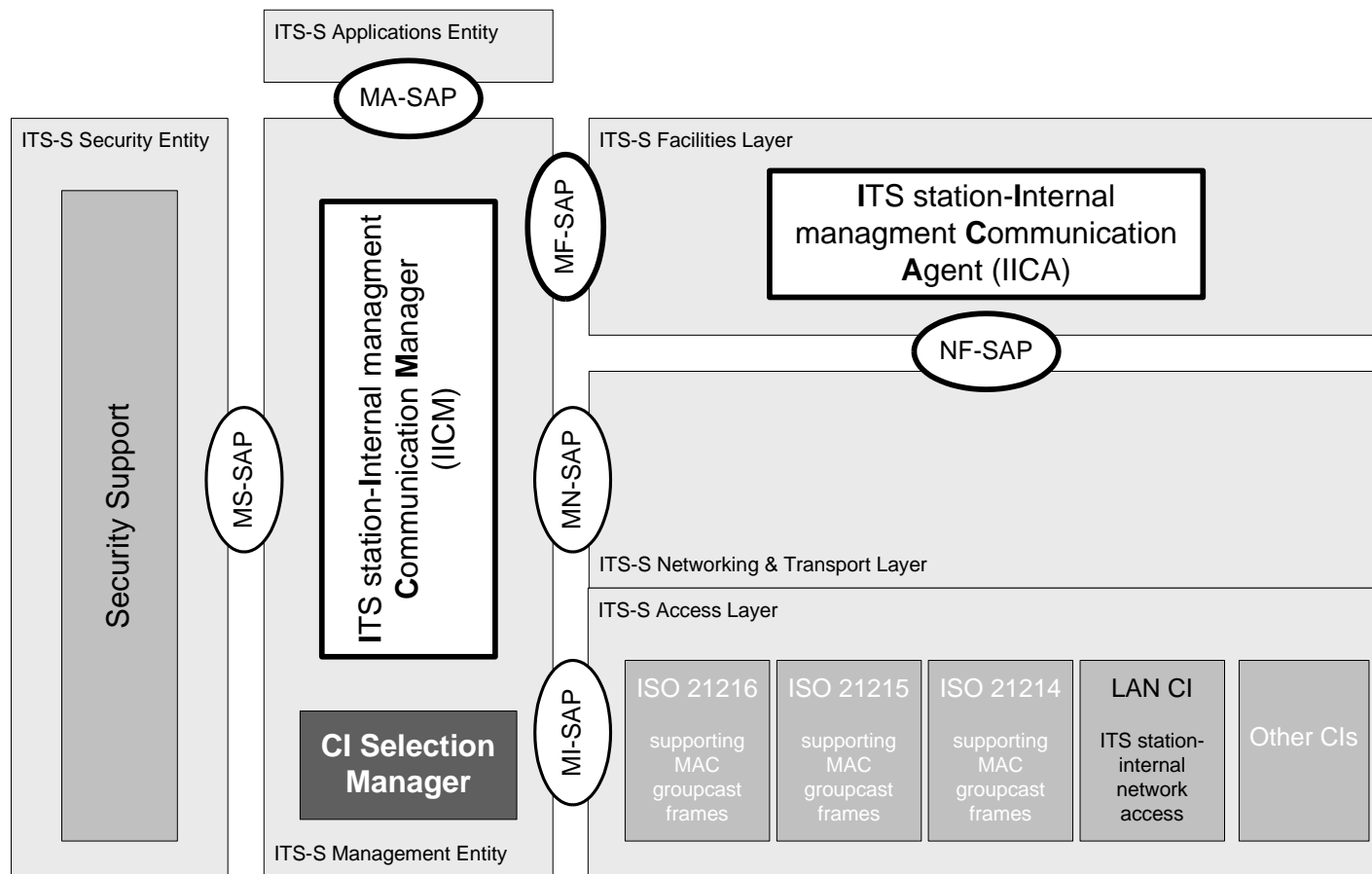
• The ITS station-internal management communications protocol (**IICP – ISO 24102-4**) together with the ITS station management SAP standard (ISO 24102-3) provides an efficient access to an IUT located somewhere in the ITS station reference architecture. The three links between the ITS test system and the SUT

- IUT protocol stimulation and observation via
 - Upper tester transport link
 - Lower layers link
- IUT protocol configuration / event notification via
 - Configuration / event notification link

may merge into a single Ethernet link (the ITS station-internal network).

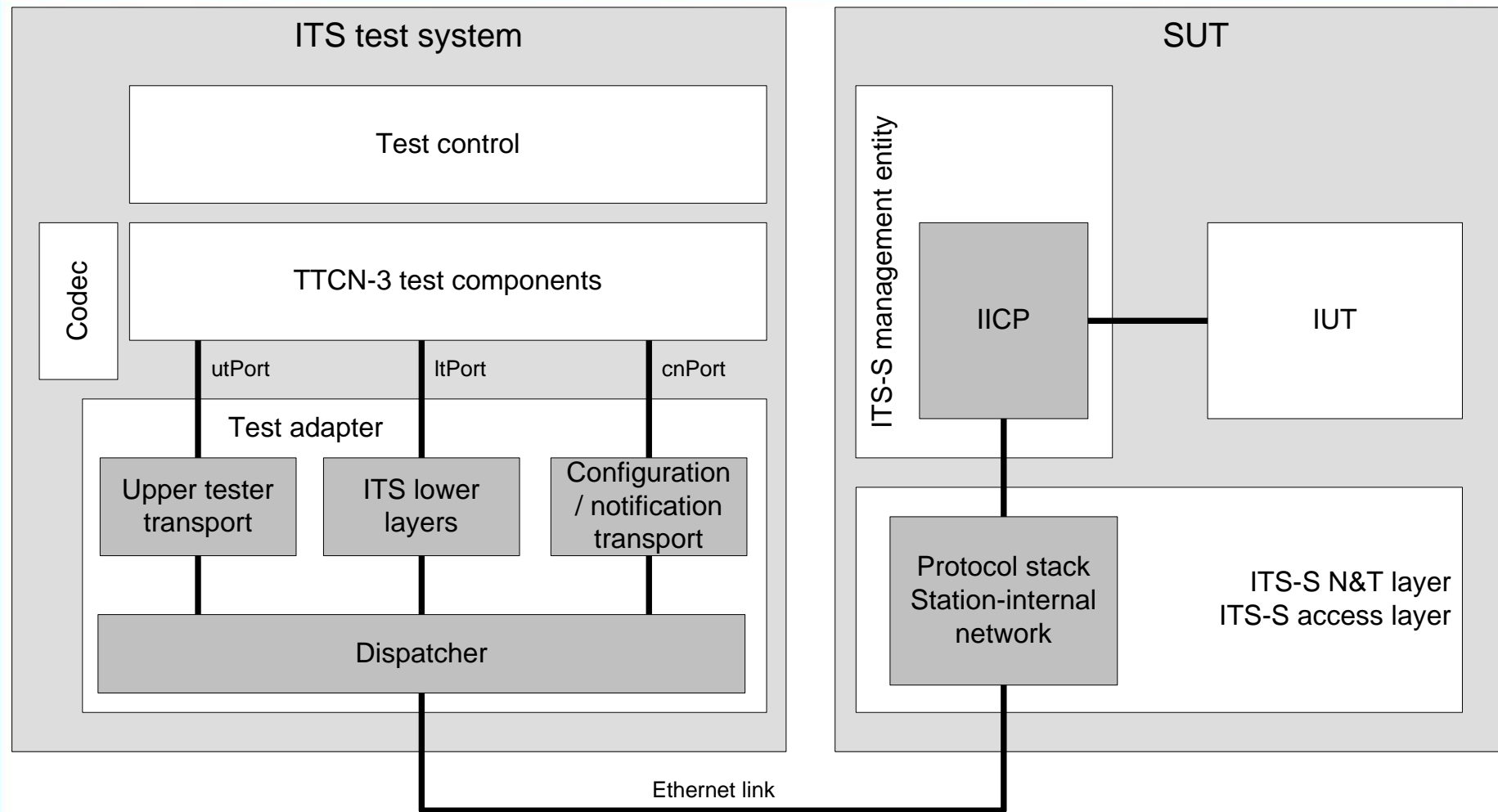
→ New CEN/ISO TS on "ITS test system architecture"

Conformance testing: Usage IICP (ISO 24102-4)

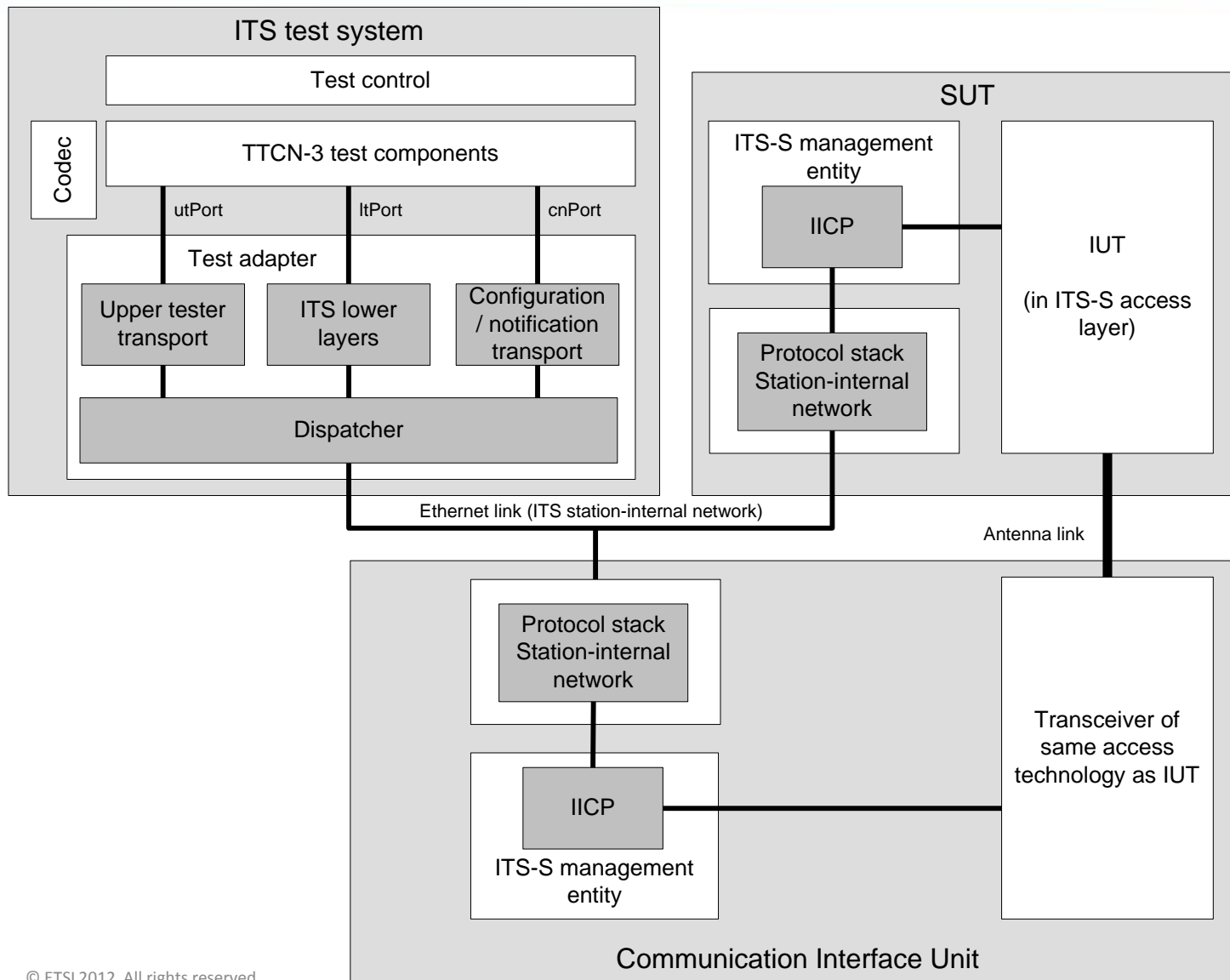


- Applicant does not need to implement a specific test access in case IICP is implemented.

Standardized link: SUT – ITS test system



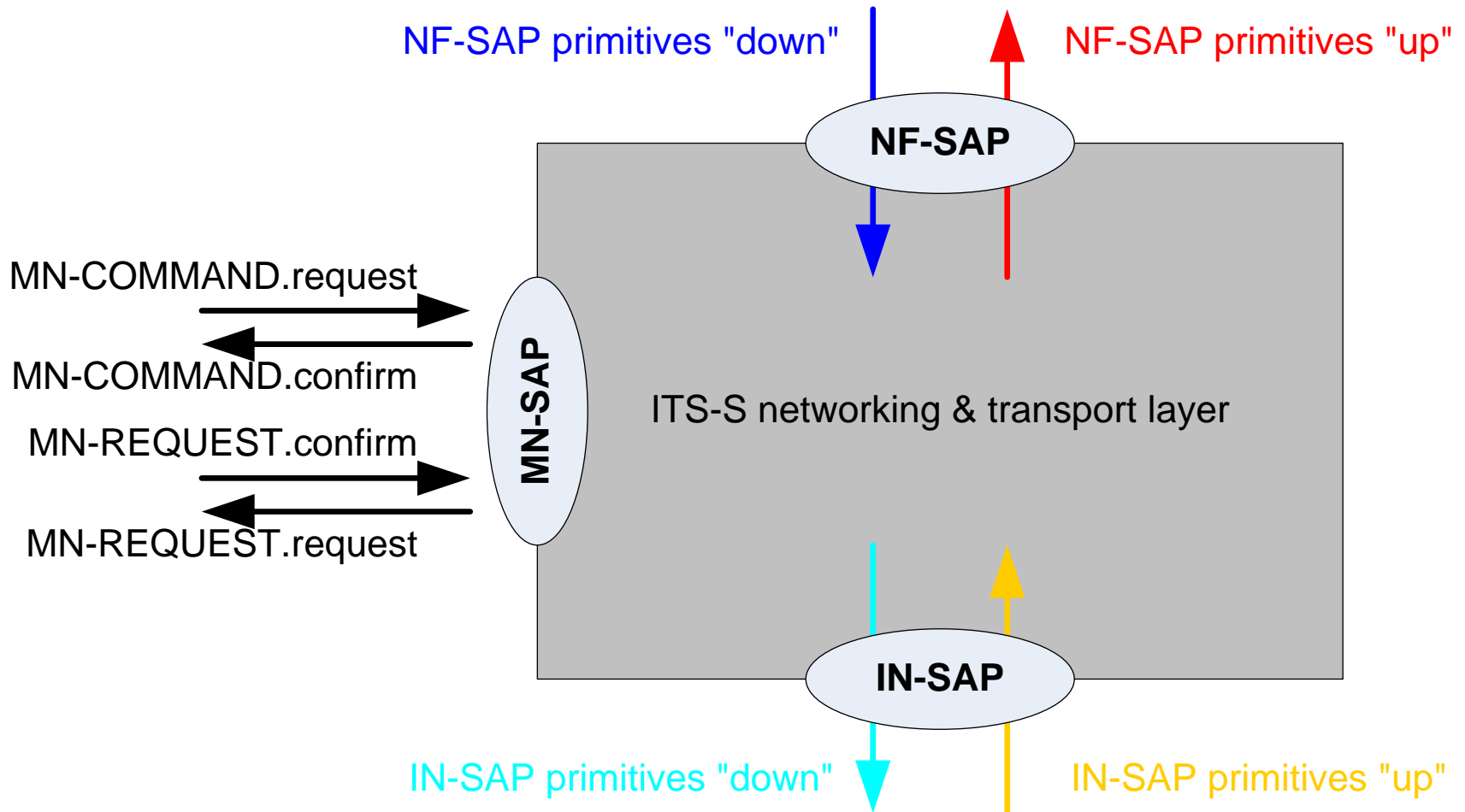
Standardized link: Test of access technology

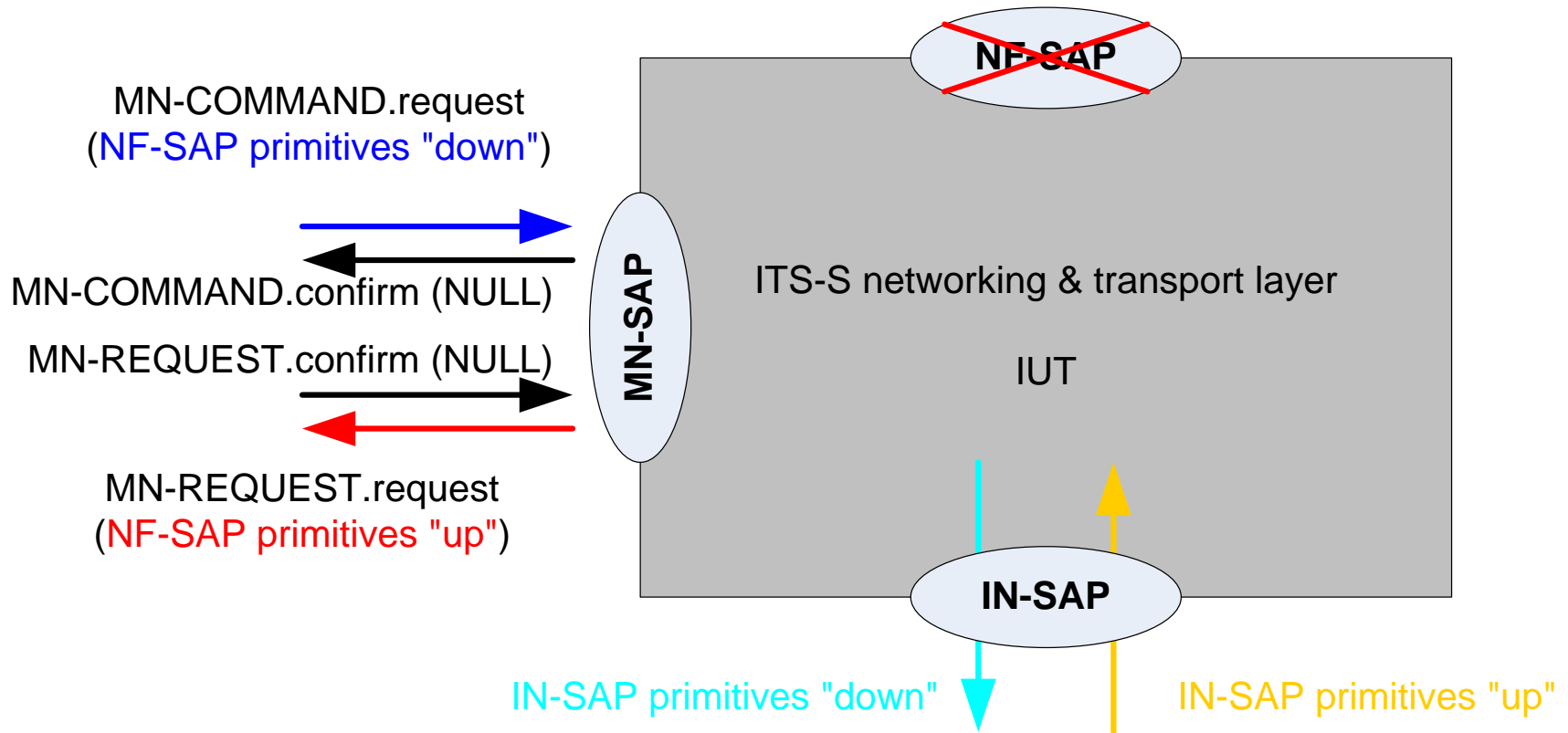


Example

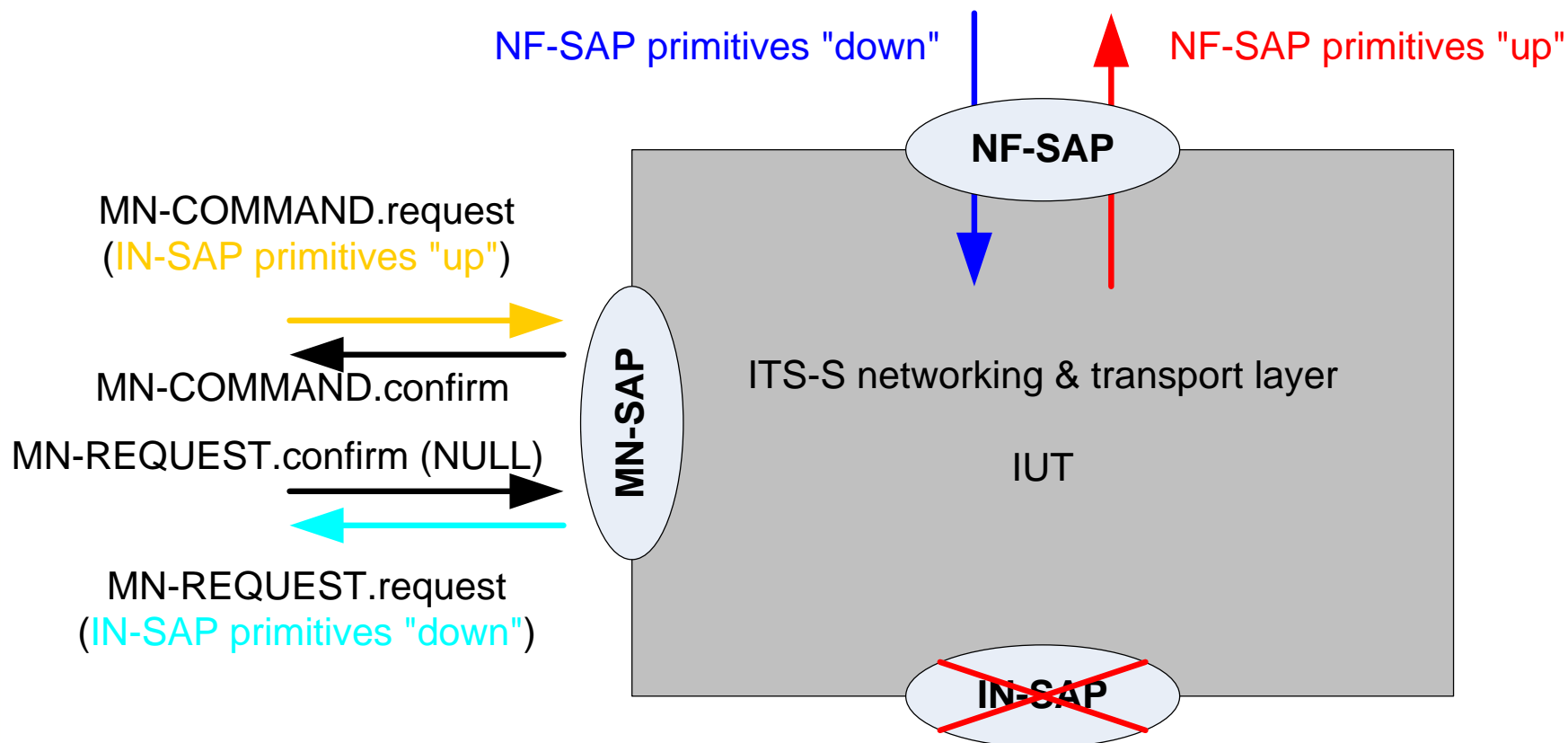
IUT located in the ITS-S networking & transport layer

Normal operation of ITS-S N&T layer

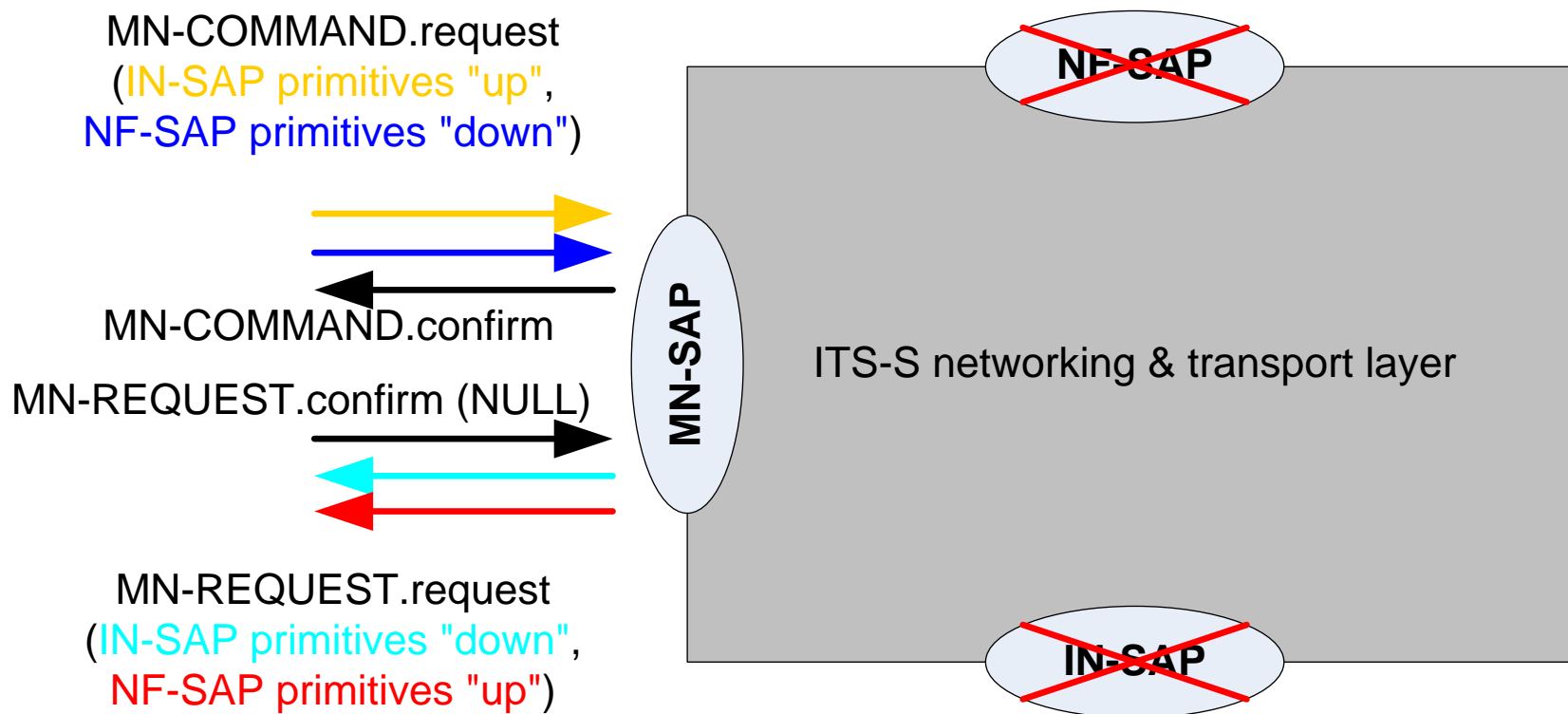




- ITS-S access layer of SUT is used to access IUT via IN-SAP



- The ITS-S access layer of SUT is **not** used to access IUT via IN-SAP.



- 🌐 The IUT on its own can be tested without using any other layer in the SUT.

General approach

IUT located anywhere in the ITS-S architecture

- Usage of IICP for **lower tester access** is applicable for protocols residing in
 - ITS-S applications entity
 - ITS-S facilities layer
 - ITS-S networking & transport layer

 - ITS-S security entity
- Usage of IICP for **upper tester access** is applicable for protocols residing in
 - ITS-S applications entity
 - ITS-S facilities layer
 - ITS-S networking & transport layer
 - **ITS-S access layer**
 - ITS-S security entity

- Usage of IICP for access to the SUT is applicable also for protocols residing in more than one of the layers or entities of the ITS station, e.g.
 - FSAP: ITS-S management entity and ITS-S facilities layer
 - IICP: ITS-S management entity and ITS-S facilities layer
- Applicant does not need to implement a specific upper test access in case IICP is implemented.
- Applicant may implement his SAPs as he wants, and still can use IICP as a standardized access for testing whether IICP is used as a station-internal management protocol or not.

- Applicant needs to implement the features of IICP to select and perform the proper test mode
 - Selection of layer(s) / entity to be tested
 - Selection of either
 - "only upper tester access and usage of existing lower layers"
 - "upper and lower tester access"
- Draft document on Test System Configuration originally developed by ISO TC204 WG16 with support from STF 455 is available to be converted into a CEN/ISO TS for C-ITS. Essential elements of it are already presented in the amendment to ISO 24102-4 and ISO 24102-3.

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Thank you!