ETSI **IoT Week 2022**

The Security Evaluation Standard for IoT Platforms (SESIP): Quantifying the Benefits of Re-Use and Mapping to ETSI EN 303 645

Gil Bernabeu
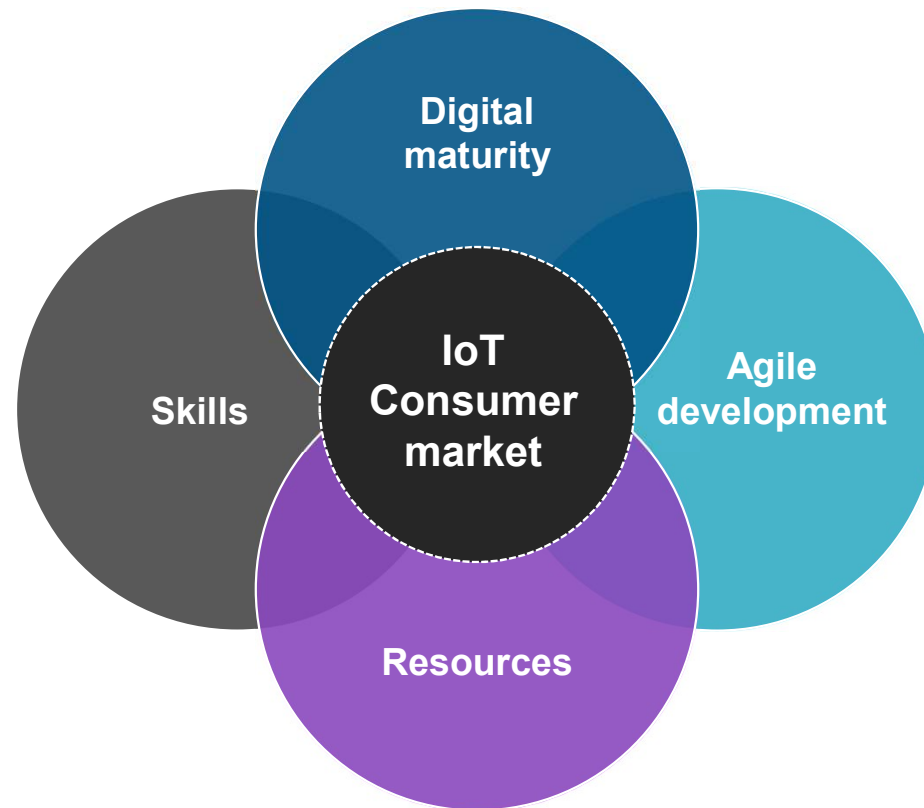*Technical Director, GlobalPlatform*

14/10/2022

Agenda Slide
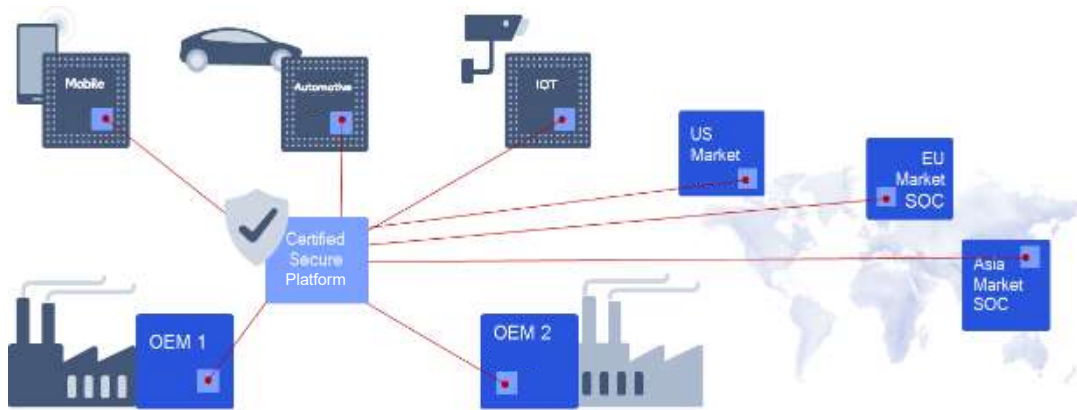
GLOBALPLATFORM®

The IoT consumer market: the coffee making machine
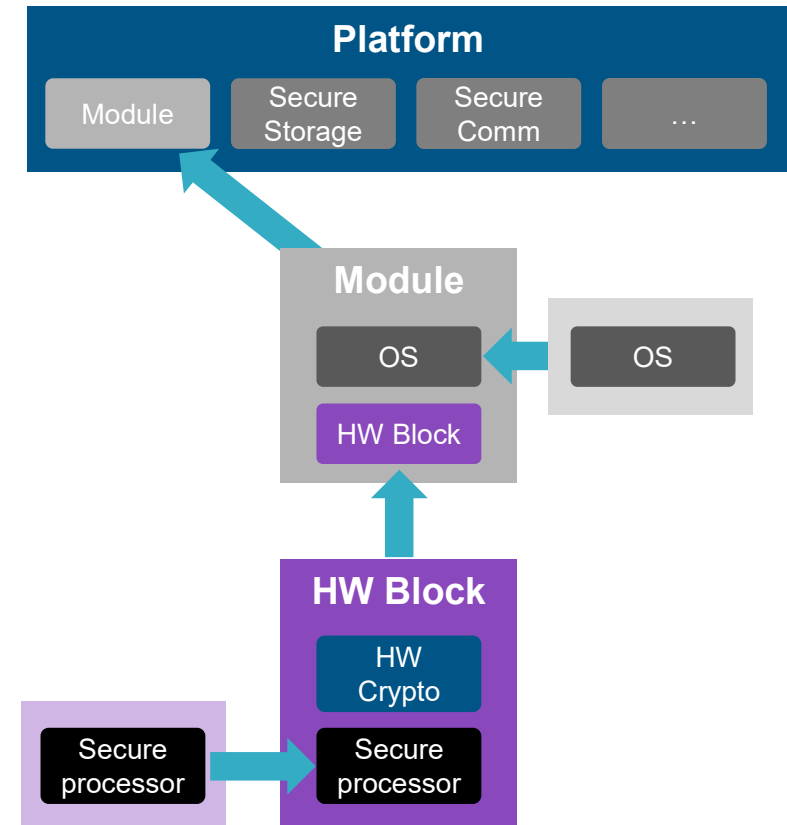
GLOBALPLATFORM®

Security Evaluation Standard for IoT Platforms

- Re-integration of component in several products: highly scalable
- Addressing geographical and vertical fragmentation of devices security requirements

Inherence, composition and reusability

GLOBALPLATFORM®

SESIP approach

- **Security Evaluation Standard for IoT Platforms**
  - Evaluation of <u>subcomponents</u> & any type of <u>compositions</u> of subcomponents
  - <u>Reuse</u> of evaluation results for <u>composition</u> evaluations
  - <u>Reuse</u> of evaluation results as support evidence for <u>compliance demonstration IoT standards</u>

Step by step, building of a complete security analysis

- **What is there?**
- **How good it's?**
- **How should it be implemented?**

GLOBALPLATFORM®
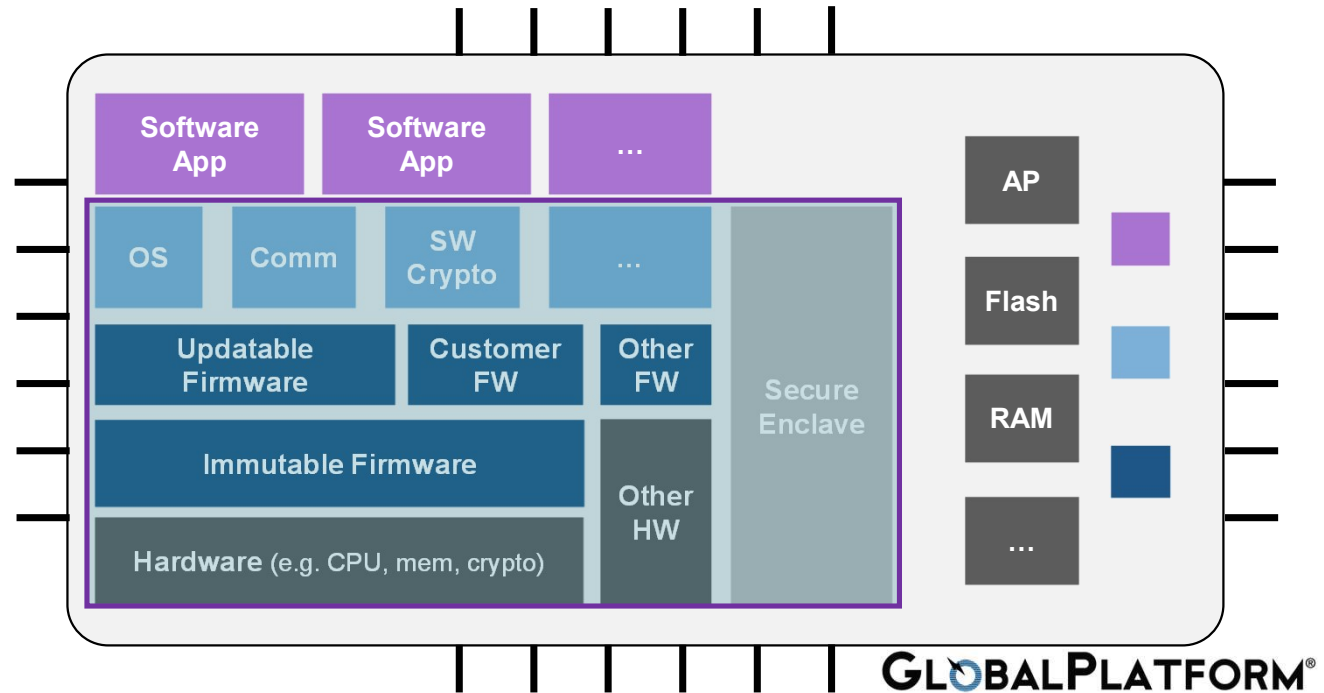
SESIP Certification process based on Profiles / Mappings

Industrials grouping

Platform developers

Evaluation Laboratory

SESIP Certification Body

Device/Product vendor

SESIP Profile(s)
e.g. HW + Ext.

SESIP Target(s)
Dev evidences

Evaluation(s)
at SESIP level x

HW/FW certificate(s)
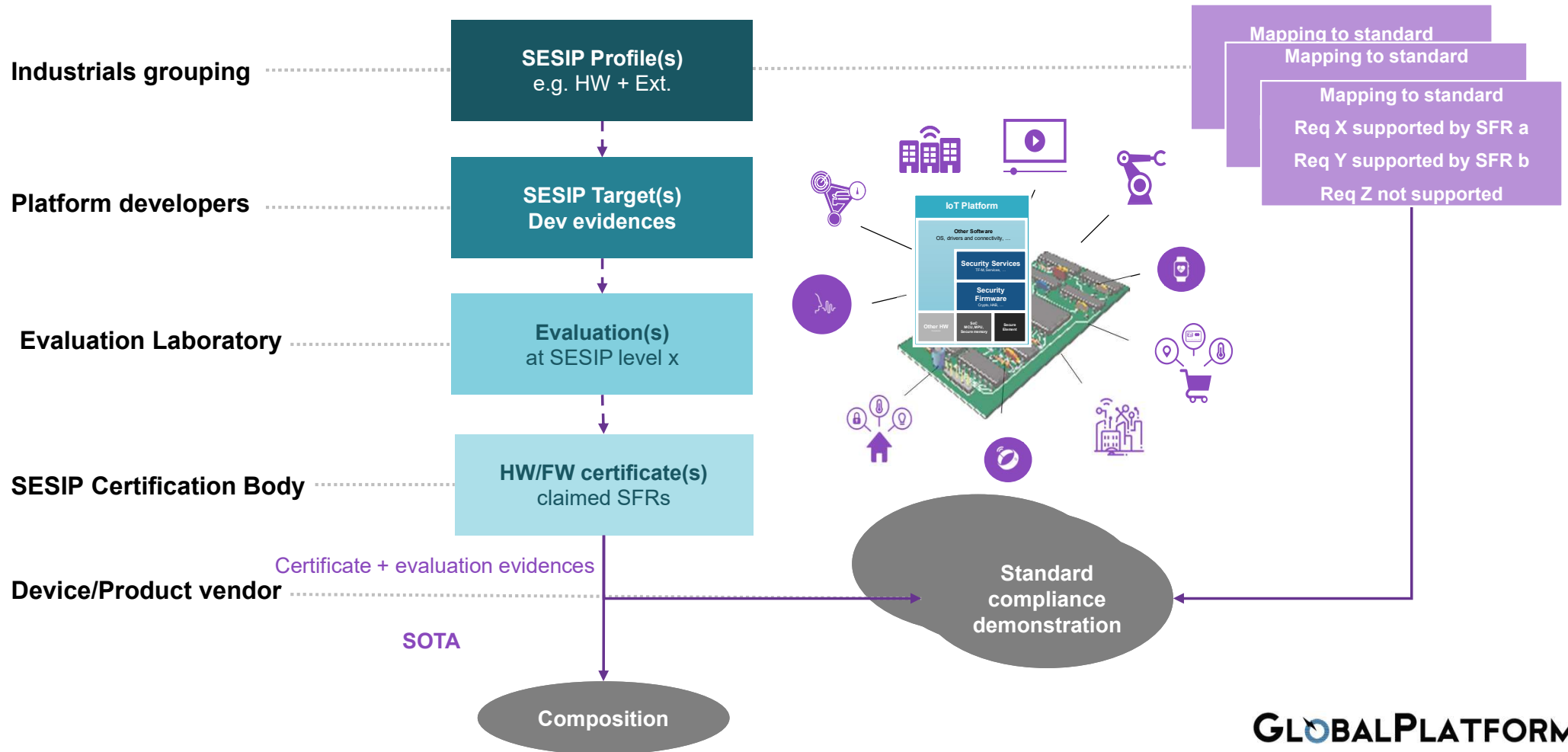claimed SFRs

Certificate + evaluation evidences

SOTA

Composition

Mapping to standard

Mapping to standard

Mapping to standard
Req X supported by SFR a
Req Y supported by SFR b
Req Z not supported

IoT Platform

Other Software
OS, drivers and connectivity, ...

Security Services
TF-M, Services, ...

Security Firmware
Crypto, HAB, ...

Other HW

SoC
MCU, MPU,
Secure memory

Secure
Element

Standard compliance demonstration

GLOBALPLATFORM®

Consumer IoT Security Document Set: Overview

EN 303 645
- Covers all consumer IoT
- Baseline requirements, outcome-focused provisions

TS 103 701
- Conformance assessment against the EN
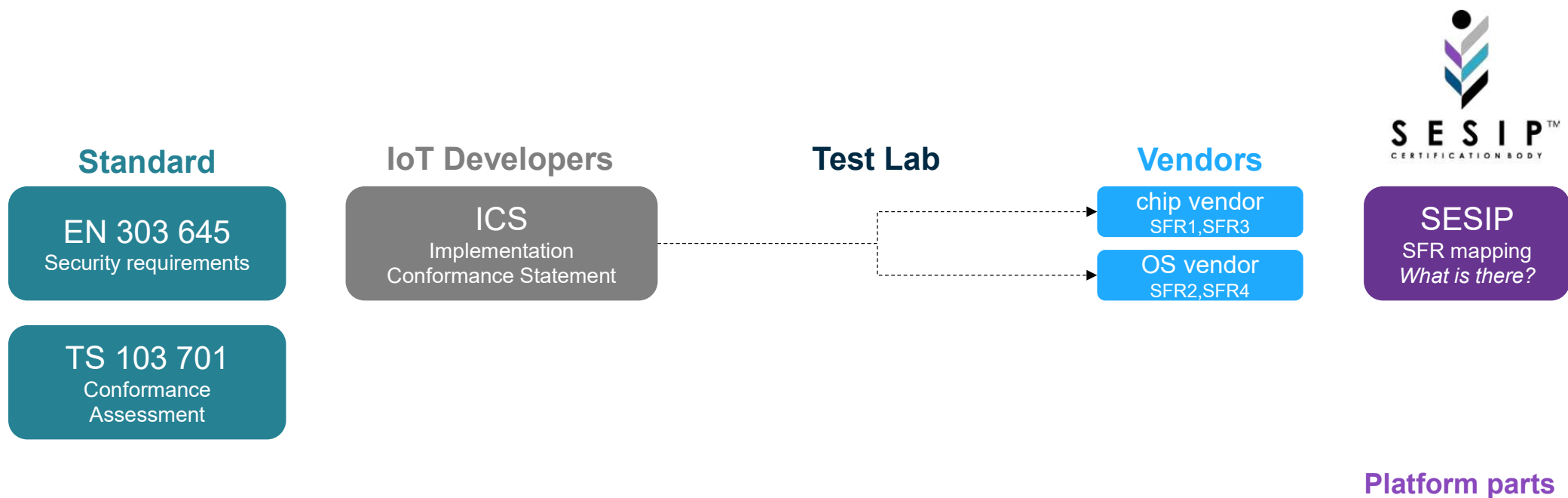- For 1st to 3rd party evaluators

TR 103 621
- Implementation guidance to help stakeholders meet the provisions of the EN. Contains Use Cases.

Vertical standards / domain-specific extensions
- E.g. smart locks, home routers. Builds on EN.
- Opp. for more prescriptive, testable and stringent specs

Overview of 303 645 and SESIP complementarity nature

Standard

EN 303 645
Security requirements

TS 103 701
Conformance Assessment

IoT Developers

ICS
Implementation Conformance Statement

Test Lab

Vendors

chip vendor
SFR1,SFR3

OS vendor
SFR2,SFR4

SESIP
SFR mapping
What is there?

Platform parts

ICS: Implementation Conformance Statement

Overview of 303 645 and SESIP complementarity nature

Standard

EN 303 645
Security requirements

TS 103 701
Conformance Assessment

IoT Developers

ICS
Implementation Conformance Statement

IXIT
Implementation eXtra Information for Testing

Test Plan
Remove what has already been assessed

Test Lab

Test Activity
Verify SFR usage & certificate applicability

Vendors

chip vendor
SFR1,SFR3

OS vendor
SFR2,SFR4

Chip vendor
Certification

OS vendor
Certification

S E S I P™
CERTIFICATION BODY

SESIP
SFR mapping
What is there?

SESIP
Assurance
How strong it is?

Platform parts

ICS: Implementation Conformance Statement
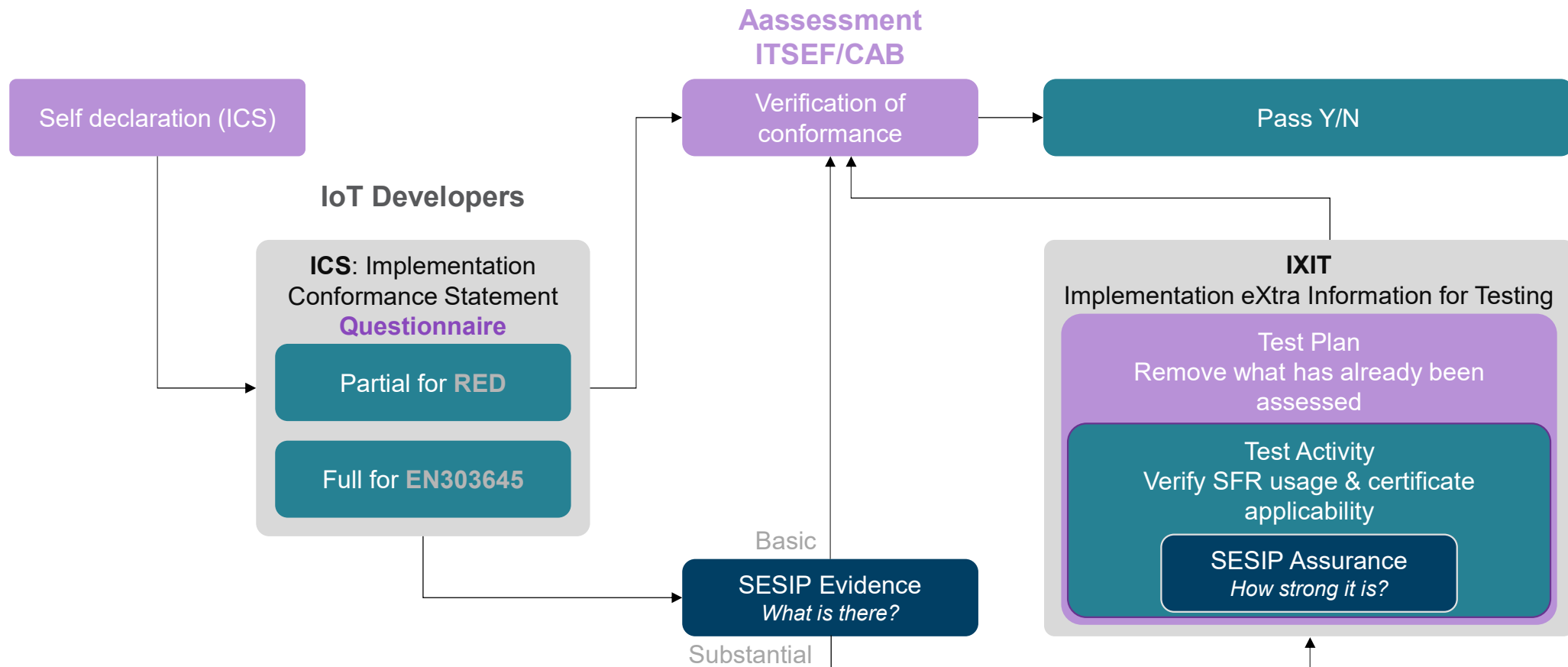**IXIT**: Implementation eXtra Information

Using SESIP Certified sub-components **reduces Testing Lab effort** on 'conformity of design' and
'conformity of implementation' and risk of non-conformity for the Supplier Organization

9

GLOBALPLATFORM®

Focus on TS 103 701 requirements support

TS 103 701 requirements

ETSI Testing 103 701 test cases	Evaluation activities SESIP SARs (Security Assurance Requirement)
Sufficiency and consistency of the IXIT documentation	Evaluation of Security Target & User guidance, Vulnerability Survey/Analysis
Conformity of the design – fulfilling of security objectives	Assessment of Security Target Vulnerability Survey/Analysis
Conformity of the implementation	Functional security testing Vulnerability Survey/Analysis

GLOBALPLATFORM®

EN303645 conformance assessment using SESIP

Self declaration (ICS)

Aassessment ITSEF/CAB

Verification of conformance → Pass Y/N

IoT Developers

ICS: Implementation Conformance Statement **Questionnaire**

Partial for **RED**

Full for **EN303645**

IXIT
Implementation eXtra Information for Testing

Test Plan
Remove what has already been assessed

Test Activity
Verify SFR usage & certificate applicability

SESIP Assurance
How strong it is?

Basic

SESIP Evidence
What is there?

Substantial

GLOBALPLATFORM®

SESIP publications: Profiles
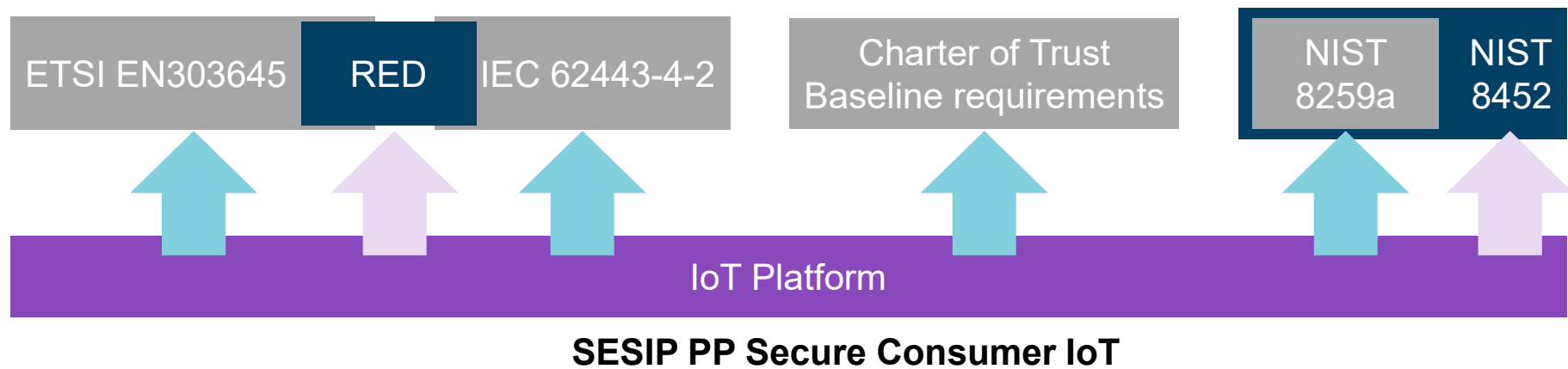
Profiles

- Core MCU/MPU SESIP Profile
- Secure Memory SESIP Profile

Whitepapers

- White Paper on SESIP composition: possibilities and benefits
- White Paper on SESIP applicability to EN 303 645
- Quantifying Benefits of SESIP Reuse

SESIP: One evaluation, multiple users and use cases

SESIP PP Secure Consumer IoT

GLOBALPLATFORM®

Join our SESIP Seminar – 19 October

Global Platform®

Join us for the **SESIP Seminar Series**

Simplifying Security Evaluation in IoT

19 October 2022
Barcelona
In person or virtually

SESIP™

In person or virtual

Wednesday 19 October

REGISTER ON THE GLOBALPLAFORM WEBSITE HERE.

Insights and real-word case studies exploring how SESIP:

- Reduces complexity, cost and time-to-market for IoT stakeholders.
- Facilitates device certification, by composition of certified parts, and reuse of certification across different evaluations.
- Aligns with other standards like ETSI EN 303 645, IEC 62443 or NIST8259, to support IoT product manufacturers to comply with specific security requirements and regulations.
- Can be adopted by labs to help build consistency across IoT certification schemes and maximise the value of SESIP.

GLOBALPLATFORM®

Contact Us

Membership:
membership@globalplatform.org

PR Contact:
globalplatform@iseepr.co.uk
Tel: +44 (0) 113 350 1922

Questions:
secretariat@globalplatform.org

Twitter
@GlobalPlatform_

YouTube
GlobalPlatformTV

LinkedIn
GlobalPlatform

WeChat
GlobalPlatform China

YouKu
GlobalPlatform

GitHub
GlobalPlatform.GitHub.com

www.globalplatform.org

GLOBALPLATFORM®