

Analysis of IEEE IC25-009-01 Initiative

The Weak Point and How to Overcome It

Analytical note · March 2026

1. Original Text

Paragraph 1 (original)

The intent is to support development of devices in a public-private structure, and to enable development of a new device Operating System - different from the closed ecosystems commonly used on current devices (e.g. Harmony, Apple and Android). We want trustworthy AI running from the hardware in the 6G phone.

Paragraph 2 (original)

This work seeks to build an ecosystem on the devices with open-source applications overseen by foundations and stewardships. It has been approved as an IEEE Industry Activity: IEEE IC25-009-01: A Technical Reference Architecture Framework for an Open 6G Device Ecosystem. An Industry Connections Activity Initiation Document (ICAID). Everyone is welcome to join.

2. Revised Text

Paragraph 1 (revised)

The intent is to support development of devices in a public-private structure, and to enable the creation of an open trusted hardware module - independent of the closed ecosystems commonly used on current devices (e.g. Harmony, Apple and Android). This hardware module operates below the operating system level, enabling trustworthy AI to run from the hardware in the 6G phone, verifiable through cryptographic attestation.

Commentary on Paragraph 1

Replacing "**new device Operating System**" with "**open trusted hardware module**" is not a cosmetic clarification. It is a change of the project's identity.

A new OS means direct competition with Apple, Google and Huawei on a field where they hold first-mover advantage and multi-billion R&D budgets. A trusted hardware module (TEE) operates below any OS level via ARM TrustZone architecture, isolating critical computations regardless of which operating system is installed. Cryptographic attestation transforms the "trustworthy AI" claim from a declaration into a technically verifiable property.

The minimal experiment you can start right now:

Remove the words "new device Operating System" from Paragraph 1 - replace with "open trusted hardware module". A single replacement resolves the contradiction, changes the project's identity from competitor to infrastructure builder - and makes the initiative reflexion-proof: if Apple learns of this plan, it still works.

Paragraph 2 (revised)

This work seeks to build a two-layer ecosystem. The infrastructure layer - the open hardware module and its protocols - is governed by a structured body with weighted participation: no single category of actor (platform vendor, chipmaker, operator, academic institution, civil society) may hold more than 25% of decision-making weight. The application layer is fully open: any developer, foundation, or stewardship may contribute. This work has been approved as an IEEE Industry Activity: IEEE IC25-009-01: A Technical Reference Architecture Framework for an Open 6G Device Ecosystem. An Industry Connections Activity Initiation Document (ICAID). Participation at the application layer is open to all; participation at the infrastructure layer is governed by the founding charter.

Commentary on Paragraph 2

"Everyone is welcome to join" without differentiation of participation levels is an open invitation for capture. The revision introduces a two-layer governance architecture on the Wi-Fi Alliance and ETSI model: the "no more than 25% per category" principle makes the standard capture-resistant without creating barriers to genuine participation.

3. Systematic Findings

3.1. The Core Contradiction

Physical contradiction: the ecosystem must be open (scale and legitimacy) and simultaneously closed (resist capture). Resolution: architectural layering. Infrastructure layer - strict governance, high entry barrier, weighted voting. Application layer - open to all.

3.2. Power Dynamics and Leverage Points

Key weakness: IEEE standards are voluntary - unlike ETSI. Three leverage points: (1) ETSI registration - mandatory EU compliance; (2) chipmakers NXP and Qualcomm as primary allies - industrial legitimacy; (3) India - 1.4 billion devices as Apple's entry condition (precedent: USB-C mandate in 2025).

3.3. Vulnerabilities to Address

Four neutralisation scenarios and counter-measures: enthusiastic adoption → weighted voting (max 25% per category); patent encirclement → patent pledge (FRAND); standard fork → independent conformance tests; regulatory capture → adopt standard before regulatory attention arrives.

3.4. Identity Conflict

Resolution: split into two projects - the standard (neutral IEEE technical document) and the reference implementation (sovereign consortium of India, EU, chipmakers). The first legitimises the second. The second creates a real product regardless of Apple and Google's behaviour.

3.5. Probability Assessment

Current formulation: 8-15%. With proposed changes (architectural layering, weighted voting, patent pledge, conformance tests, ETSI pathway, chipmaker coalition): 25-35%.

4. Solution Architecture

The diagram reflects the complete structure of the proposed solution: from the identified contradiction through the split into two projects and architectural layering to leverage points, protection mechanisms, and the minimal first step.

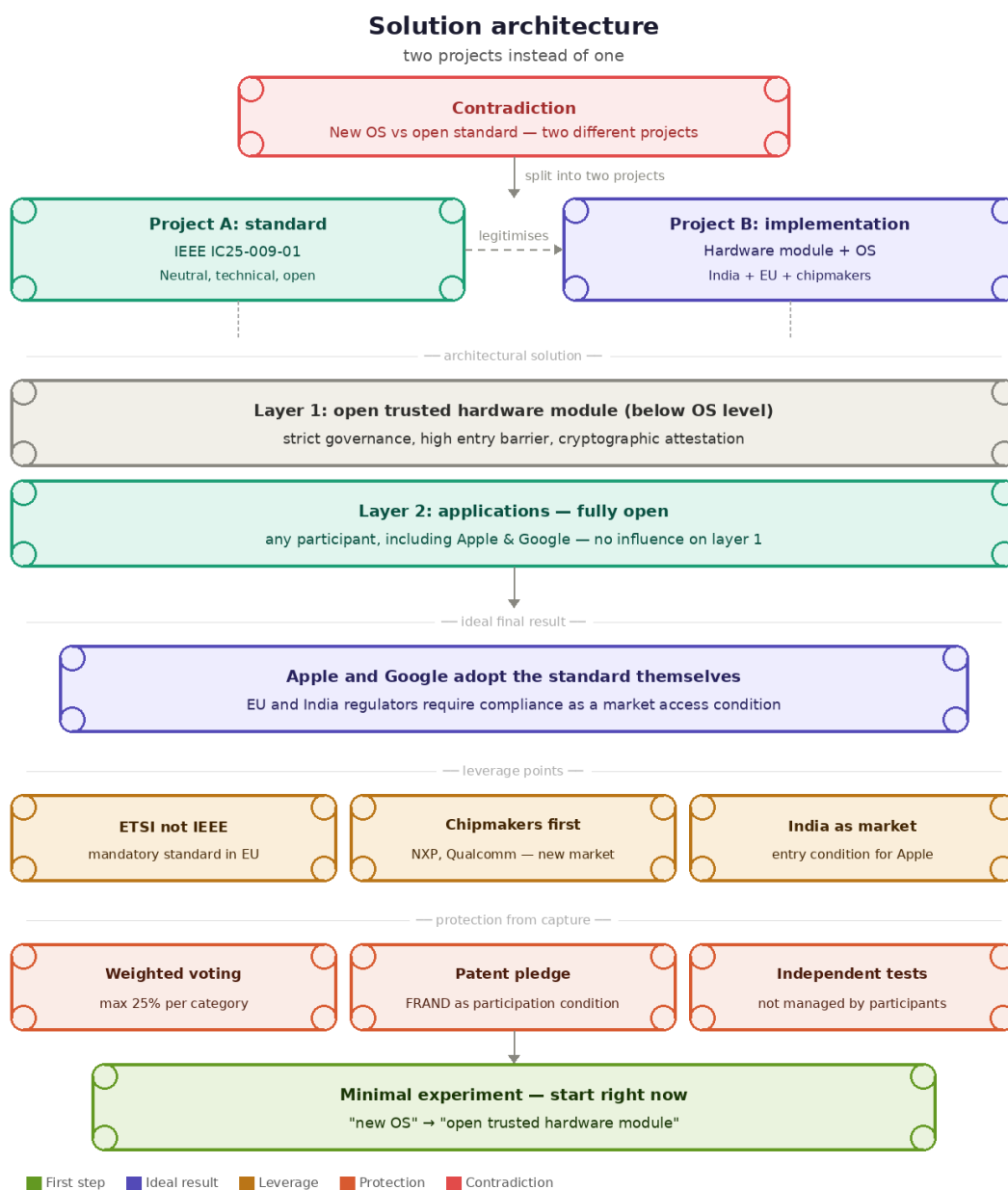


Diagram: Solution architecture — two projects instead of one

5. Integrated Conclusion

Three analytical approaches - identifying structural contradictions, analysing live systems with reflexive actors, and mapping power structures - all point to the same place: the weak point is that two fundamentally different projects are described as one.

Separating "standard" from "implementation" is the only configuration in which the initiative is reflexion-proof: to block the standard, Apple would have to join it, and in joining would have to accept its terms.

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