

Work Item Description

Title: MExE-Run-Time Independent Framework Feasibility Study

Evolving from the established MExE Release 1998, 1999, Rel-4, and Rel-5 specifications, the MExE ~~Run-Time Independent Framework~~ extends and develops the UE-based support of the client/server model to cover the areas of granular security and high performance, based on implementation options independent of the technology of any specific MExE run-time environment.

1 3GPP Work Area

| | |
|---|--------------|
| | Radio Access |
| | Core Network |
| | Services |
| X | Terminals |

2 Linked Work Items

- MExE Security Analysis Activity
- MExE Release 6

3 Justification

MExE is based on the concept of identifying external standards suitable for supporting services from User Equipment (UE), bringing them into the 3GPP scope by direct reference, and providing additional detail to unify the whole. Unfortunately, this currently has resulted in heavy dependencies between the MExE concepts and underlying technologies of the run-time environments identified in the external standards. It is important that the MExE Security Framework, Capability Negotiation, Content Negotiation, and download services are applicable to the various available and emerging run-time environments as the 3GPP technologies progress in time. Therefore, this Work Item intends to broaden the applicability of the MExE security framework and services, enabling all MExE run-time environments to operate with a consistent MExE service environment. In particular, the new features and capabilities of this Work Item should allow for independence from, and re-use by, an extremely large set of external standards corresponding to different run-time environments. It also allows for independent use of the framework for secure software downloads without the need of a MExE run-time environment.

The ~~feasibility study analyses and designs~~ within this effort ~~is~~are intended to identify the minimal, essential characteristics and functions, and requirements, for MExE devices to operate with a wide variety of run-time environments. The main benefit of these analyses is that the extracted (and potentially contracted) characteristics and requirements are applicable to run-time environments identified in the future, as well as currently available run-time environments.

Other benefits include increased clarity and reduced complexity. The new, MExE run-time-independent conformance criteria will reduce the perceived complexity of the specification. Furthermore, MExE adoption will be enhanced by clarifying the existing MExE specifications with regard to the service environment and security framework since the work will specify fundamental algorithms, formats, and

protocols common to all runtime environments. This will also reduce implementation complexity and allow for more robust implementations that can be tested for conformance. These benefits are directly applicable to current discussions in 3GPP T2 regarding the “Impact of T2 Work on Implementation”, T2-010587.

4 Objective

To conduct analyses of MExE Security Framework, Capability Negotiation, Content Negotiation, and Service Management documented in TS 23.057 for effectiveness in building an efficient scheme that applies to a run-time-independent UE application environment. Result of these analyses will be a feasibility study.

Investigate and identify support for a means to comply with MExE requirements, independent of the specific MExE run-time technology.

The work covered by this WID is expected to include the following items:

- Investigate and identify support for creation of a generic MExE framework, which includes the MExE service environment and MExE security framework, and how it can be applied in the context of an arbitrary run-time environment.
- Investigate and identify support for necessary security enhancements and a common set of specific security technologies, such as certificate packaging and PKI.
- Investigate and identify support of a minimal generic mandatory MExE framework that provides a standardized security and trust framework to catalyse innovation from application/content developers and protect consumers from malicious or poorly written executables.
- Investigate and identify improving redundant or convoluted implementation-points from the specification.
- Investigate and identify a focus on interoperability.
- Investigate and identify the supporting mechanisms for embracing a new run-time environment into the generic MExE framework, compatible with existing classmark definitions.

The output document of this work item will be used internally by T2 for further work on MExE. ~~as a basis of agreement on any necessary Change Requests to S1's TS 22.057 (Mobile Execution Environment) and T2's TS 23.057 (Mobile Execution Environment).~~ Through correlation to work activities in the MExE Security Analysis Activity WID, there feasibility study may be proposed ~~identify necessary~~ changes to S3's TR 33.900 (3G Security) and TS 23.102 (Services and Systems Aspects - Security).

5 Service Aspects

MExE supports services via ~~MExE~~ applications on the MExE device, possibly interacting with applications on remote servers. The work item will enhance the applicability of the MExE service environment to a wide range of runtime technologies.

6 MMI-Aspects

Since the MMI characteristics are largely defined by the runtime environment, the work item will not focus on MMI except to the extent that interaction with the user is a requirement of the service environment and security framework.

7 Charging Aspects

The MExE specification enables MExE executables to potentially support charging for services. T2 will liaise with TSG-SA5 for service management and charging-related issues.

8 Security Aspects

T2 will liaise with TSG-SA3 to ensure support for any security-related changes, improvements, and required technologies that may be identified.

9 Impacts

| Affects: | USIM | ME | AN | CN | Others |
|-------------------|-------------|-----------|-----------|-----------|---------------|
| Yes | | X | | | |
| No | | | X | | |
| Don't know | X | | | X | |

10 Expected Output and Time scale (to be updated at each plenary)

| New specifications | | | | | | |
|---|-------|------------------------------|----------------------|---|-------------------------|---|
| Spec No. | Title | Prime rsp. WG | 2ndary rsp. WG(s) | Presented for information at plenary# | Approved at plenary# | Comments |
| TBD23.xyz | TBD | T2 | | TSG-T#17 | TSG-T#18 | Feasibility Study |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at plenary# | | Comments |
| 22.057 | | Mobile Execution Environment | | | | CRs dependent on results of WID analyses. If applicable |
| 23.057 | | Mobile Execution Environment | | | | CRs dependent on results of WID analyses. If applicable |

11 Work item rapporteur
Aaron Cohen (Intel Corporation)

12 Work item leadership
3GPP-T2

13 Supporting Companies
Hewlett-Packard, Intel Corporation, Microsoft, and Motorola.

14 Classification of the WI (if known)

| | |
|---|----------------------------|
| | Feature (go to 14a) |
| X | Building Block (go to 14b) |
| | Work Task (go to 14c) |