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TECHNICAL REPORT

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Data Solutions (DATA).

Modal verbs terminology

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1 Scope

The present document identifies meaningful eco-bio emergencies use cases that cannot be captured by ETSI TS 103 757 [i.3] using oneM2M as the IoT inter-connexion framework. In particular real-time, forecasting, and identity issues will be focused.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

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[i.1] ETSI TR 103 533: "SmartM2M; Security; Standards Landscape and best practices".

[i.2] ETSI TR 103 591: "SmartM2M; Privacy study report; Standards Landscape and best practices".

[i.3] ETSI TS 103 757: "SmartM2M; Asynchronous Contact Tracing System; Fighting pandemic disease with Internet of Things (IoT)".

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[i.4] ETSI TR 103 509: "SmartM2M; SAREF extension investigation; Requirements for eHealth/Ageing-well".

[i.5] ETSI TR 103 510: "SmartM2M; SAREF extension investigation; Requirements for Wearables".

[i.6] ETSI TR 103 582: "EMTEL; Study of use cases and communications involving IoT devices in provision of emergency situations".

[i.7] ETSI TR 118 501: "oneM2M Use Case collection".

[i.8] Luigi Liquori and Egan Perais: "oneM2M Executive Viewpoint series: interview Luigi Liquori (Inria)".

3 Definition of terms, symbols and abbreviations

3.1 Terms

Void.

3.2 Symbols

Void.

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3.3 Abbreviations

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

ACT	Asynchronous Contact Tracing
AI	Artificial Intelligence
IoT	Internet of Things
PAMAC	Patrolling and Monitoring Administration Centre
ROV	Remoted Operated Vehicles
UxV	Unmanned x Vehicles

4 Background

4.1 Motivation

ETSI TS 103 757 [i.1] (Asynchronous Contact Tracing (ACT)) was conceived in opposition with synchronous contact tracing protocols, the latter tracking two individuals on the basis of the anonymous transmission of the identities of two mobile phones staying in the range of 2 meters for at least 15 minutes, but relying on the fact the one of the two individual, when infected, notifies its illness to the tracking system, notification that was largely disattended because of social fears.

ACT takes the contact tracing from another point that could be resumed as follows:

1) using IoT sensors to record viruses, called Detection Services;
2) equip them with a uniquely identified ID;
3) broadcast the ID using a Peripheral Service (e.g. Wi-Fi® transmitter); and
4) communicate the virus results to a Base Control Station Service thought an intermediary Local Service to load balance the message charge.

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An human, usually equipped with a smartphone in its pocket, can continuously listen and record the IDs related with the position he visited, but he will never communicate anytime anywhere such information (hence its name, asynchronous). The user can at any time query the Base Control Station Service about the virus status in a geographic area recorded by one or more ID-Detection Service and eventually match those IDs with the footprint recorded in its Smart Mobile Application: in case of non-empty intersection, he will take countermeasures.

Figure 4.1-1 resume the mapping of ACT in the common oneM2M framework.

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