



Evaluation and validation of connected
mobility in real open systems beyond
5GS

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Project deliverable D4.2

ENVELOPE trial sites integration and pre-evaluation testing report

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1.0	02/07/2026	Project coordinator	Completes the revision and submits the deliverable to EC.

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Project executive summary

ENVELOPE aims to advance and open the reference 5G advanced architecture and transform it into a vertical-oriented one. It proposes a novel open and easy-to-use 5G-advanced architecture to enable a tighter integration of the network and the service information domains by

- exposing network capabilities to verticals,
- providing vertical information to the network; and
- enabling verticals to dynamically request and modify key network aspects,

all performed in an open, transparent, and easy-to-use, semi-automated way.

ENVELOPE will build APIs that act as an intermediate abstraction layer that translates the complicated 5GS interfaces and services into easy to consume services accessible by the vertical domain. The project will deliver an experimentation framework that will facilitate vertical services in accessing a series of innovations developed in the project, namely: edge computing with service continuity support (federation/migration), zero-touch management, multi-connectivity, dynamic slicing and predictive QoS.

ENVELOPE will deliver 3 large scale Beyond 5G (B5G) trial sites in Italy, Netherlands and Greece supporting novel vertical services, with advanced exposure capabilities and new functionalities tailored to the services' needs. Although focused on the Connected and Automation Mobility (CAM) vertical, the developments resulting from the use cases (UC) will be reusable by any vertical. The ENVELOPE architecture will serve as an envelope that can cover, accommodate, and support any type of vertical services. The applicability of ENVELOPE will be demonstrated and validated via the project CAM UCs and via several 3rd parties that will have the opportunity to conduct funded research and test their innovative solutions over ENVELOPE.

Social Media link:



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Deliverable executive summary

This deliverable presents the verification of the WP3 innovations integrated into the three ENVELOPE trial sites. Based on the requirements defined in D2.1 [1], the activities performed confirm that the trial sites are ready to support both the Open Call projects and the validation activities carried out in WP6.

The verification focused on the Beyond-5G (B5G) network infrastructure, MEC platforms, APIs, and ENVELOPE technical enablers. Across all trial sites, these components have been successfully deployed, verified, and made operational. Their readiness has been further demonstrated through the execution of project use cases and the deployment of Open Call applications.

While some site-specific challenges were encountered, these did not compromise the overall objectives of the project. The Italian trial site identified limitations related to dual-slice communication and radio performance in specific coverage conditions. The Dutch trial site successfully mitigated the withdrawal of a key use case provider by engaging alternative partners. The Greek trial site confirmed compliance with the majority of its functional requirements, with the remaining requirements to be validated during the final end-to-end trials in WP6.

Overall, the verification activities demonstrate that the ENVELOPE trial sites have reached the required level of maturity to support the final project evaluation phase. The B5G infrastructure, MEC environments, APIs, technical enablers, and associated use cases are operational and available for the ongoing WP6 validation activities, providing a solid foundation for the assessment of the project outcomes.