



A Holistic, Innovative Framework for the Design,  
Development and Orchestration of 5G-ready  
Applications and Network Services over Sliced  
Programmable Infrastructure

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MATILDA

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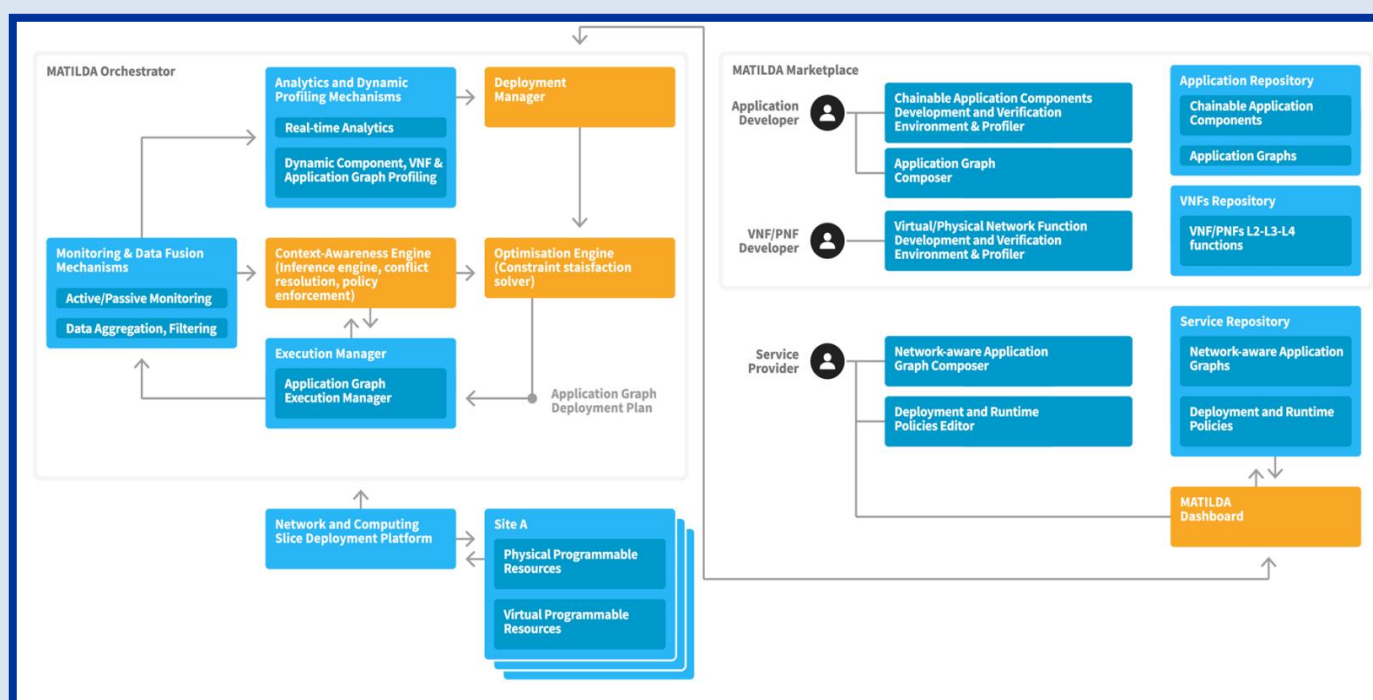
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The vision of MATILDA is to design and implement a novel **holistic 5G end-to-end services operational framework** that tackles the lifecycle of design, development and orchestration of **5G-ready applications**, as well as **5G network services** running over a programmable infrastructure, while following a unified programmability model and a set of control abstractions.

The vision of the project shall be realized by meticulously following the design and implementation paradigm presented in the **MATILDA's conceptual architecture** shown below.



By implementing the different **software modules** defined in the presented **MATILDA conceptual architecture**, MATILDA aims to devise and realize a radical shift in the development of software for **5G-ready applications**, along with virtual and physical network functions and network services, to support the deployment and management of network slices operating across multiple cloud environments.

To actualize this aim, MATILDA will adopt a well-defined **unified programmability model**, define a well-structured set of abstractions and create an open development environment that may be used by applications as well as network functions developers through the **MATILDA's 5G marketplace**.

MATILDA had an Interim Review meeting held in March 2018 in Brussels, Belgium. During the review meeting, amongst other things discussed was a number of points, which came in the form of suggestions proposed towards the enhancement of the project for better clarifications and scope definition considering the foreseen constraints.

As a result of the fruitful discussions that took place in Brussels, the need emerged for a project amendment. Hence, the MATILDA consortium members put forward a proposal for the amendment of the project. The request for the amendment of the project was submitted on 23 April 2018 and was accepted by the **European Commission** (EC) on 6 July 2018.

Some of the suggestions provided during the Interim Review meeting held in March are briefly presented below:

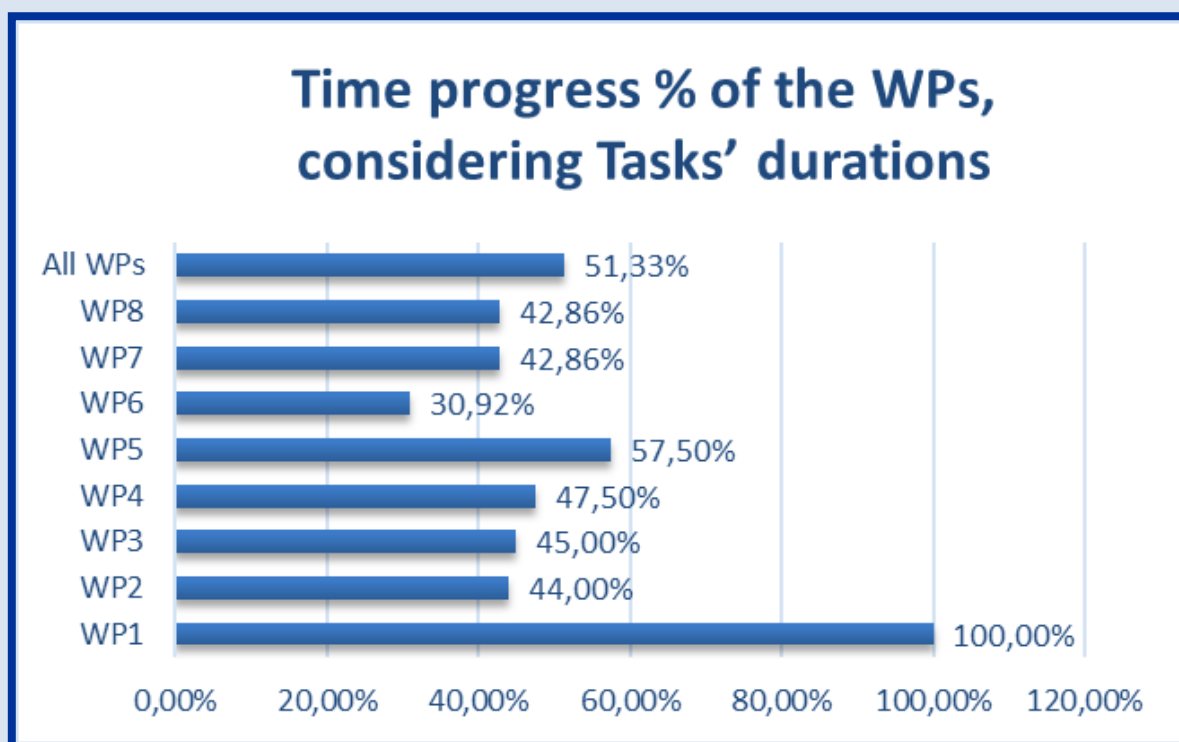
1. Extension of the project duration **from 30 to 35 months**;
2. Extension of the **first reporting period** of the project to **15 months**;
3. Update of the **description of the actions** in the proposal in relation to the **description of work package 4**;
4. **Shift of resources** from **partner CNIT** to subcontracting entity;
5. **Withdrawal** of partner **SUITE5 DATA INTELLIGENCE SOLUTIONS LIMITED** (Ireland with PIC no. 917629895);
6. **Addition** of partner **SUITE5 DATA INTELLIGENCE SOLUTIONS LIMITED** (Cyprus with PIC no. 910462080);
7. **Removal** of Linked **3<sup>rd</sup> Party BIO**;
8. **Internal shift** of resources (in PMs) for **partners CNIT, INC, NCSRD** and **UNIVBRIS** to better cope with the ensuing re-organization of the defined work.

Regarding the withdrawal of the consortium partner **SUITE5 DATA INTELLIGENCE SOLUTIONS LIMITED** (Ireland – PIC no. 917629895) and its replacement with a new partner **SUITE5 DATA INTELLIGENCE SOLUTIONS LIMITED** (Cyprus – PIC no. 910462080), it is obviously to be noted that the new consortium partner is a branch of the withdrawn partner operating from their headquarters in Limassol, Cyprus.

**Suite5** is an **Information Technology Solutions and Services SME** with the mission to **deliver innovative data-driven intelligent solutions** through state of the art technologies. Suite5 provides research-inspired solutions and practical support for their diverse set of clients (public and private organizations) by combining strong technology expertise and hands-on approach in managing and implementing projects defined to meet their aims and objectives.

The Suite5 data-driven services lifecycle consists of **four consecutive stages**; namely, **Collect, Prepare, Analyse** and **Visualize**. Using this functional cycle, Suite5 is able to extract valuable information from a large set of collected data and deliver data-driven intelligence solutions, which are pivotal in the areas of **Real-time and Batch Data Analytics, Linked Open Data, Data Management, Context Awareness** and **Rule-based Execution Engines** along with other emerging **high-end data-driven solutions**.

Following the proposed amendment to the project, which was accepted in July, it is important to note that MATILDA has now been extended from 30 to 35 months. Notwithstanding, the project has been progressing relatively smoothly, as shown on the figure below, where the time progress in percentage of the different defined work packages, taking care of the durations of each composing task, is presented. The considered time duration is from the beginning of the project until the end of the first reporting period (1 June – 31 August 2018).



The figure shows that **MATILDA is advancing coherently with the workplan schedule**, with an overall average of about 51% of time progress in the work packages at the end of first 15 months since the project started. This is a good indication that the project is developing as planned and little or no lapses should be expected by the end of the project in month 35.

In any case, no stones will be left unturned in ensuring that the project completes as expected. For this reasons, there is a **close coordination** among all the different consortium partners. Several peer meetings between various consortium members have been organized and over 60 remote meetings have already taken place to discuss about packages' activities. All the MATILDA partners have also physically met during the four plenary meetings organized so far, including the kick-off meeting.

We are pleased to announce that **MATILDA Consortium** has released **18 deliverables** from both the concluded and ongoing tasks:

1. D1.1 – MATILDA Framework Reference Architecture  
*Nature: Report, Dissemination Level: Public*
2. D1.2 – Chainable Application Components & 5G-ready Application Graph Metamodel  
*Nature: Other, Dissemination Level: Public*
3. D1.3 – VNF/PNF & VNF Forwarding Graph Metamodel  
*Nature: Other, Dissemination Level: Public*
4. D1.4 – Network-aware Application Graph Metamodel  
*Nature: Other, Dissemination Level: Public*
5. D1.5 – Deployment and Runtime Policy Metamodel  
*Nature: Other, Dissemination Level: Public*
6. D1.6 – Supported Verticals, Use Cases and Acceptance Criteria  
*Nature: Report, Dissemination Level: Public*
7. D2.1 – 5G-Ready Applications and Network Services Development Environment and Marketplace – First Release  
*Nature: Other, Dissemination Level: Confidential*
8. D3.1 – Intelligent Orchestration Mechanisms – First Release  
*Nature: Other, Dissemination Level: Confidential*
9. D4.1 – Network and Computing Slice – First Release  
*Nature: Other, Dissemination Level: Confidential*
10. D5.1 – Technical Integration Points and Testing Plan  
*Nature: Report, Dissemination Level: Confidential*
11. D6.1 – Evaluation Framework and Demonstrators Planning  
*Nature: Report, Dissemination Level: Public*
12. D7.1 – Communication Roadmap  
*Nature: Report, Dissemination Level: Confidential*
13. D7.2 – 5G-PPP Interaction, Dissemination, Clustering & Standardisation Activities Report – Halfway  
*Nature: Report, Dissemination Level: Public*
14. D7.3 – Communication Activities Report – Halfway  
*Nature: Report, Dissemination Level: Public*
15. D7.4 – Market Analysis, Business Plan, Sustainability Model & Innovation Management  
*Nature: Report, Dissemination Level: Confidential*
16. D7.9 – Data Management Plan  
*Nature: ORDP - Open Research Data Pilot, Dissemination Level: Confidential*
17. D8.1 – Project Management Handbook  
*Nature: Report, Dissemination Level: Confidential*
18. D9.1 – POPD-Requirement No.1  
*Nature: Ethics, Dissemination Level: Confidential*

**All 18 deliverables have been accepted and approved by the European Commission**, only a resubmission has been request concerning D1.6, providing a harmonized description of the use cases and including KPIs regarding the major objectives and benefits of the project.



The **MATILDA's first reporting period review meeting** has come and gone!

The review meeting took place on **22-23 November 2018, in Genoa, Italy**, hosted by CNIT. Actually, before the main review meeting event, the representatives of each consortium members have had a rehearsal meeting just two days prior to the main event. The rehearsal meeting was intended to give extra clarity to any form of misunderstood concepts or ideas regarding any aspects of the project and harmonise the thought of all the project partners in order to realise the common vision of the project. Basically, the rehearsal meeting was a preparatory exercise towards the review meeting.



The Project Reviewers witnessed the review meeting, while unfortunately the Project Officer could not be physically present at the venue of the event and, hence, a conferencing system connection was provisioned for his remote participation.

We had **two days of exhaustive review sessions**, during which the reviewers provided us with constructive critical review feedback towards the continuous enhancement of the outcome of the project. Most significantly, during the review exercises, the reviewers provided comments regarding the outcomes of the different work packages and especially the different deliverables.

A **live demonstration** of the ongoing implementations of the different tasks in the project was also presented to the reviewers through the MATILDA's integrated platform deployed within the facilities of the CNIT National Laboratory of Smart and Secure Networks, hosted by the University of Genoa. Also, there were short offline embedded demonstrations of some specific functionalities offered especially by the MATILDA's **vertical orchestrator platform** which was presented to the reviewers in the course of the presentations of the respective work packages.

As the first day of review was indeed a very exhausting and long one, what is better than bringing the day to a close with a social dinner in a warm, soothing and relaxing environment? That was exactly what happened next. We brought the long day of review to an end at a seaside restaurant located in the Genoa downtown. Both the reviewers and the members of the consortium shared that wonderful relaxing night together with tasty and delicious meals on the menu for the night. Pictures from the social dinner are shared below.





The review meeting was pretty long, rigorous and intense. We had two days of very comprehensive and extensive discussion regarding the progress of MATILDA.

Amongst others, the reviewers and the project officer were particularly interested in getting answers to the questions of: *What was done? How was it done? and Why was it done following that particular direction?* Similar patterns of questions were asked throughout the entire review sessions for all the work packages one after another. The work package leaders and their contributing consortium partners did an awesome job in providing appropriate and detailed answers to all the questions asked.

At the end of the two days of review sessions, the reviewers were pleased with all the answers and clarifications they received following each of their questions. They criticized a few things and largely made some **very useful and insightful comments** that could enhance the development of the project. They gave a summary statement of the review exercise and remarks derived from their perception of the conduct and progress of MATILDA. Finally, the Project Officer from Brussels also gave a closing remark, which was followed by an appreciation speech by the Project Coordinator, Prof. Franco Davoli. The review session was then brought to a successful close.

