Rossini

RObot enhanced SenSing, INtelligence and actuation to Improve productivity and job quality in manufacturing

Deliverable

D9.8 EFFRA Innovation Portal - RP1

Deliverable Lead: CRIT

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Disclaimer

The sole responsibility for the content of this publication lies with the ROSSINI project and in no way reflects the views of the European Union.

Abstract

According to Task T9.3 of WP9 "Impact Enhancement", D9.8 EFFRA Innovation Portal - RP1 should be outlined by M21. This deliverable reports the ROSSINI project profile on the EFFRA Innovation Portal which is hosted at https://portal.effra.eu/project/1853.

In the EFFRA Innovation Portal the emphasis is in describing the impact of the project, its technologies, demonstrators and results at the industrial level and its relevance for the factories of future.

This deliverable presents an introduction of the ROSSINI profile on EFFRA and some screenshots of the main technical sections that have been completed.

This deliverable will be updated periodically following the evolution of the ROSSINI project and the update of the project profile on the Innovation Portal.

The final update of this report (D9.9 EFFRA Innovation Portal - RP2) will be delivered by the end of the project (M42).

Scope

The EFFRA Innovation Portal is a dissemination tool deployed by EFFRA (the European Factories of the Future Research Association) in cooperation with the EU Commission to provide an online resource for sharing information about research and innovation projects and associated results and demonstrators in the area of manufacturing.

The EFFRA Innovation Portal features all Factories of the Future PPP projects, but it can include also other regional, national or European projects.

By filling in and updating the Rossini project profile on the EFFRA portal, we contribute also to the Progress Monitoring Report of EFFRA. This report monitors the outcomes and the impact of the Factories of the Future PPP with respect to four main KPIs:

1. Mobilised private investments: to understand and capture/show the level of industrial engagement within a given cPPP, including actual expenditure related to individual projects

2. New skills and/or job profiles: to understand how job profiles and skills are being created and developed within the activities of the cPPP.

3. Impact of the cPPP on SMEs (in Euros and a qualitative analysis)

4. Significant innovations: to understand the technological outputs of the cPPP to ensure it is achieving its goals and continues to be industry-relevant

Eventually, by completing information required in the Innovation Portal, the Rossini project contributes to the Made In Europe's consultation which will participate in the definition of the Horizon Europe 2021-2027 Programme.

Privacy Policy on the EFFRA Innovation Portal: all information that is included on the Innovation Portal should be considered as public information. This is comparable to the information that is made available through the project's website or social media channels.

List of Acronyms

European Commission	EC
European Factories of the Future Research Association	EFFRA
Key Performance Indicators	KPI
PPP	Public Private Partnership

List of Figures

1   Introduction

The EFFRA Innovation Portal is a useful dissemination tool and a visibility window for the ROSSINI project activities and partnership. By updating and monitoring the information contained in the Innovation Portal, we ensure visibility to the project activities and results.

Below, you can find the main screenshots deriving from the ROSSINI project profile on the Portal.

This is the link to the project profile: https://portal.effra.eu/project/1853

Information on this page will be constantly monitored and updated to keep viewers updated on the project activities and progresses.

The second version of this deliverable will be released by the end of the project (M42).

2   The ROSSINI Project Profile Architecture

Below you can find the structure of the ROSSINI project profile on EFFRA.

The project profile can be divided into 4 main sections which are analyzed in the following chapters:

1. General Features and Status of the project;
2. Results & Demonstrators;
3. Innovation and Added Value;
4. Made in Europe guidance document.

Figure 1 - ROSSINI Project Profile Architecture
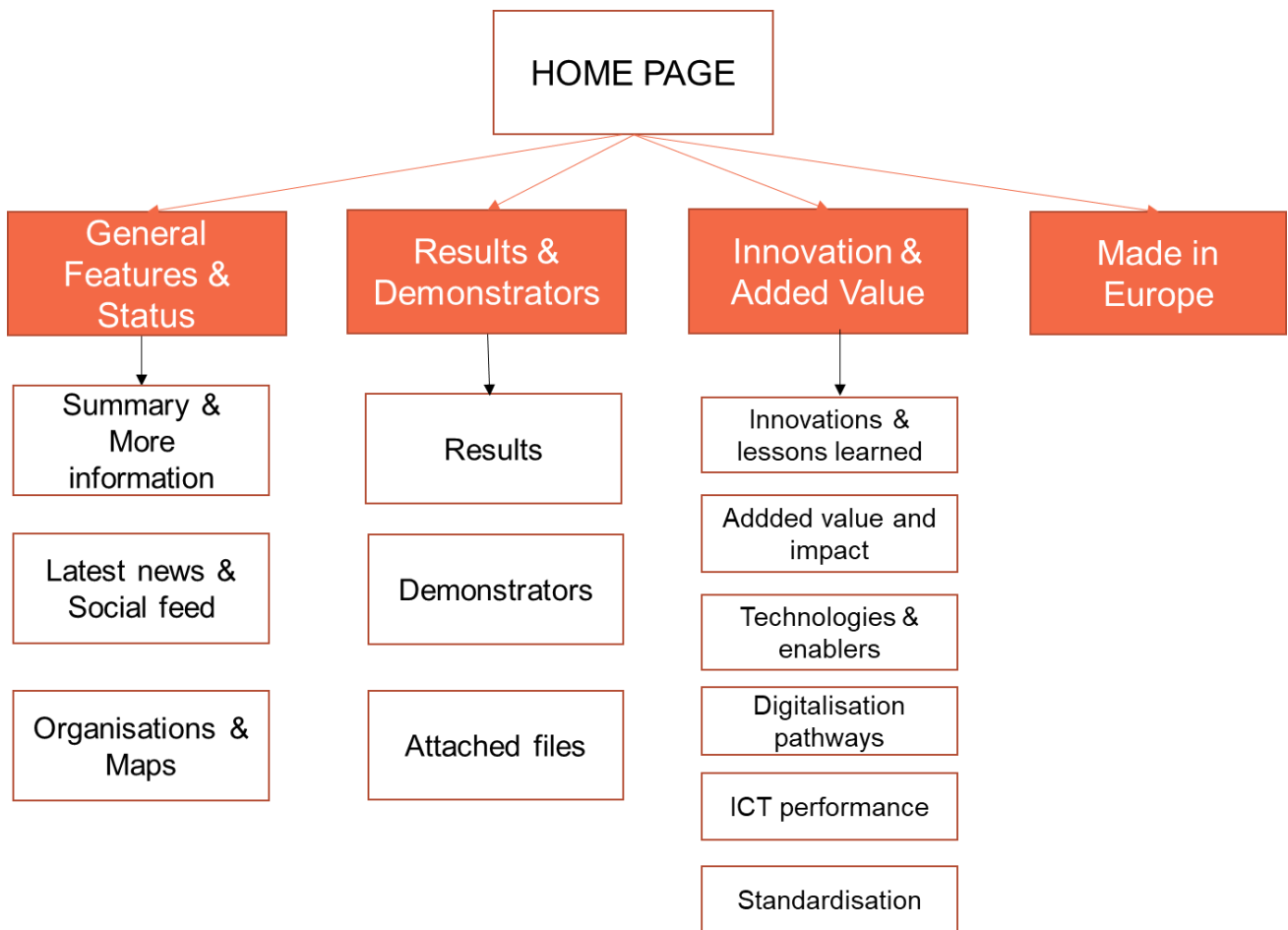
3   Home Page

This is a general screenshot from the ROSSINI project's profile page.

Figure 2 - ROSSINI Project Profile home page

4 General features and overall status of the Project

This section includes general information on ROSSINI such as the project summary, partnership, list of results and demonstrators and main source of information, i.e. the website and social media channels. Moreover, there is the project official logo in high definition and the main quantitative information on the project, i.e. the duration and the overall budget.

4.1 The Summary

The summary section is the "business card" of the ROSSINI project. It aims to provide viewers and stakeholders with precise and concise information on the project's objectives, innovation and research lines together with quantitative information on the project and useful links.

The abstract will be updated during the project lifetime.

Figure 3 – Summary

Summary

The ROSSINI project aims to develop a disruptive, inherently safe hardware-software platform for the design and deployment of human-robot collaboration (HRC) applications in manufacturing. By combining innovative sensing, actuation and control technologies (developed by world market leaders in their field), and integrating them in an open development environment, the ROSSINI platform will deliver a set of tools which will enable the spread of HRC applications where robots and human operators will become members of the same team, increasing job quality, production flexibility and productivity.

Thanks to enhanced robot sensing capabilities, the deployment of artificial intelligence to optimise productivity and safety, and natively collaborative manipulation technologies, ROSSINI will deliver high performance HRC workcells, combining the safety of traditional cobots with the working speed and payloads of industrial robots.

The ROSSINI research lines will this be:

- SENSING: A high performance Smart and Safe Sensor System for human and robot detection & tracking, capable of quickening sensors response time by 70%
- CONTROL: A safety aware control architecture for robot dynamic reconfiguration, capable of reducing robot task execution time by 45%
- ACTUATION: An innovative, collaborative by birth robot manipulator, to be marketed through the ROSSINI platform, capable of increasing the working speed when collaborating with humans by 45%
- HUMAN FACTORS: Human factors analysis for mutual predictability of robot and human intentions, capable of increasing job quality index by 15%
- RISK ASSESSMENT: A risk assessment procedure based on new interpretation of collision values, capable of reducing (combined with other results) by 30% the time and cost of reconfiguration, and increasing the allowed robot working speed by 20%

The research lines will be combined into 3 demonstrators (white goods, electronic equipment, and food packaging).

More information

Web resources:	https://www.rossini-project.com https://cordis.europa.eu/project/rcn/218228/factsheet/en
Start date:	01-10-2018
End date:	31-03-2022
Total budget - Public funding:	7 978 176,00 Euro - 7 978 176,00 Euro
Call topic:	Effective Industrial Human-Robot Collaboration (RIA) (DT-FOF-02-2018)
Twitter:	@Rossini_project

4.2 Communication activities

Recently, the EFFRA Innovation Portal included a new funtion, the "Twitter feed and news functionality on the EFFRA Innovation Portal" allowing projects to publish relevant information on their progresses and sourcing posts from the project's Twitter profile.

News published on the "Latest news" section are then reported in the EFFRA Innovation Portal Dashboard, a forum reporting the most recent news from all the projects available on the Portal.

Figure 4 – Twitter Feed and Dashboard

5   Results and Demonstrators

This section contains the list of deliverables, main results and demonstrators of the project.

It will gain consistency with the project development and definition of the demonstrators in the next months.

Figure 5 - Results, Demonstrators & Attached files

6   Significant Innovation & Added Value of the Project

This section collects the ROSSINI Project significant and highly valuable technological innovations.

Additionally, it provides information on the significance for SMEs, added value and impact of the ROSSINI project solutions together with some more technical information on user requirements, ICT performance characteristics and standardisation elements.

At the moment, general information was included and some sections, such as the "Lessons learned" subsection or the "Business Model Aspects" section will be filled in the forthcoming months once activities, mainly related with the project's exploitation, will be carried out.

6.1   Significant Innovations and lessons learned

This section includes information on the ROSSINI project regarding:

1. Significant innovations and qualitative and quantitative achievements the project is pursuing;

2. The impact the project will have also in SMEs;

3. Information regarding the project use cases.

Figure 6 - Significant Innovations and lessons learned
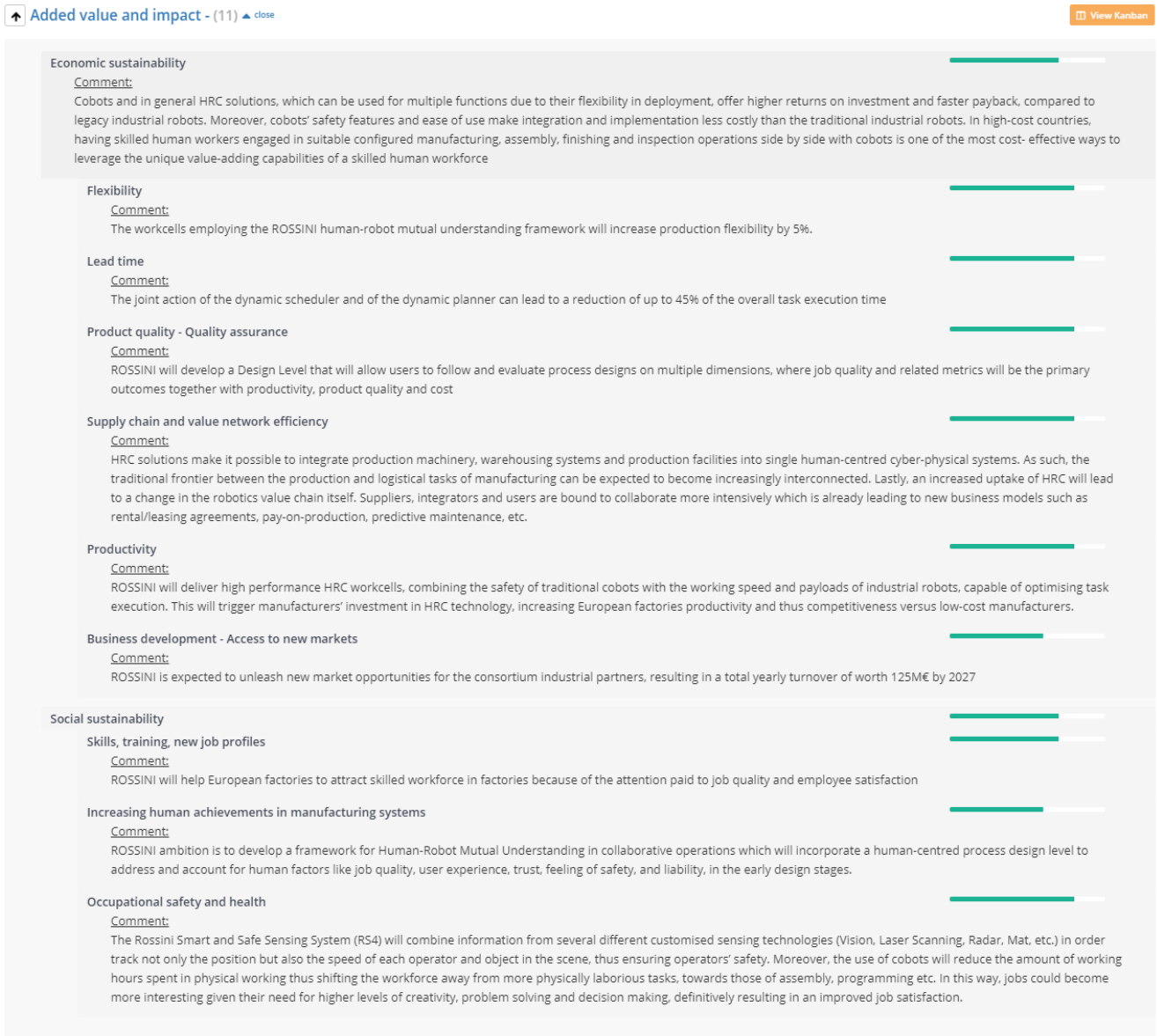
6.2 Added Value and Impact

To assess the added value and impact of the project, we focused mostly on ROSSINI's Economic and Social sustainability potentials.

Figure 7 - Added value and Impact

6.3 Digitalisation pathways

The ROSSINI project was also positioned on pathways to digitalisation of manufacturing.

The pathways to digitalisation of manufacturing were developed during the Connected Factories project (2016-2019) to evaluate how digitalisation and the deployment of digital platforms can bring value within different kinds of manufacturing perspectives, such as factory automation, value networks or product-service development. The pathways enhance the awareness among different stakeholders about the actual and future use of digital technologies in manufacturing and facilitate the migration from legacy situations towards innovative approaches.

For more information on the pathways to digitalisation of manufacturing: https://www.connectedfactories.eu/

ROSSINI has been placed within the Autonomous Smart Factories pathway: https://www.connectedfactories.eu/autonomous-smart-factories-pathway

Figure 8 - Digitalisation pathways

7   Made in Europe – Draft R&I Objectives

Eventually, the ROSSINI Project contributed also to the public consultation led by EFFRA to assess the four Main Objectives and the associated suggested Research & Innovation objectives that are included in the Made in Europe guidance document released by EFFRA in April 2020.

Figure 9 - Made in Europe
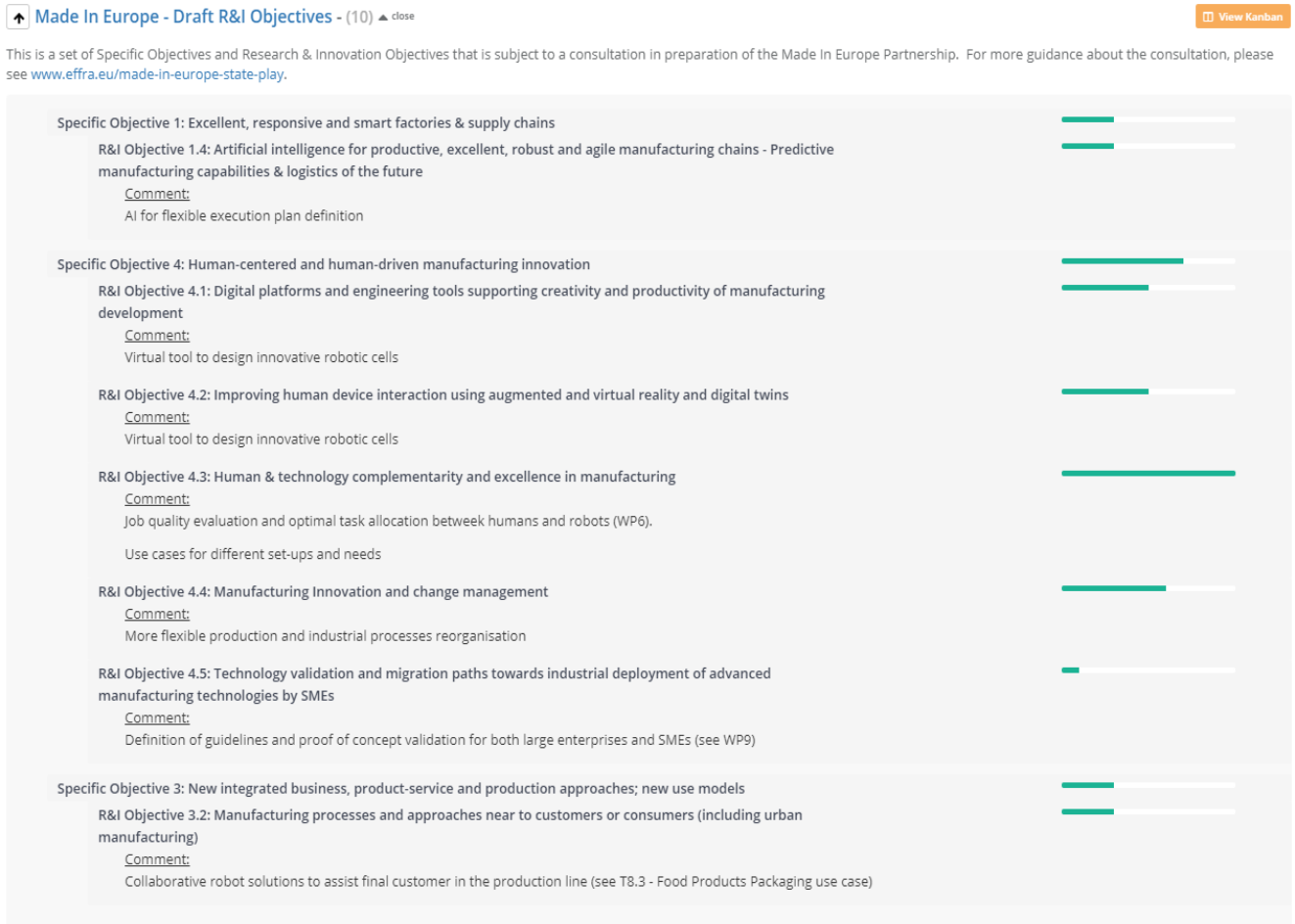
8   Conclusion

The RP1 of the ROSSINI project profile on the EFFRA Innovation Portal is due at M21. However, information contained on the website page will be periodically upated up to the end of the project.

In the next months, information about project demonstrators, the updated list of results, the lessons learned and the Business Model aspects of ROSSINI will be gradually included.

Furthermore, CRIT will monitor the development of the project technical activities and results to keep information on the portal updated and will collaborate with CORE, the partner responsible for the Communication and Dissemination activities of ROSSINI, to give visibility to the project profile and to keep it updated with relevant news spread also via the project website and social media channels.

The second and final version of this deliverable (D9.9 EFFRA Innovation Portal - RP2) will be released by the end of the project (M42).