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Background of the AI maturity tool for the EIT Cross KIC AI activity

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RESEARCH REPORT

VTT-R-00157-22

DigiMaturity

 To discover the maturity and potential development path of digitalization

Al maturity

 To discover the maturity and potential development path of applying artificial intelligence

ManuMaturity

 To discover the maturity and potential development path of reaching beyond Industry 4.0

Background of the AI maturity tool for the EIT Cross KIC AI activity

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Confidentiality: Public Version: Monday, 21 February 2022



beyond the obvious



Report's title			
	tool for the EIT Cross KIC AI activity		
Customer, contact person, ac	Order reference		
Darmstadt, Germany	nbH, Adrian Bablok, Hilpertstrasse 3	1, 64295	
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EU AI maturity tool for EIT KICs	S		
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Approval

VTT TECHNICAL RESEARCH CENTRE OF FINLAND LTD

Date: 21 February 2022

Signature:



Name:

Tuija Rantala

Title: Research Team Leader



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1. Introduction

VTT has published maturity tools for four themes: Digitalisation, applying Artificial intelligence (AI), reaching beyond Industry 4.0 and ensuring Cyber security. The tools are available in internet for noncommercial use. The maturity assessment will be displayed immediately on the screen when the relevant response options have been selected. The data is saved on VTT database and VTT can contact the respondents and propose a result discussion or further collaboration.

The triplet of VTT's maturity tools - <u>DigiMaturity</u> (Leino et.al 2017), <u>AI maturity</u> (Saari et. al 2019) and <u>ManuMaturity</u> (Saari et. al 2021), were listed among the top 3 in the EC JRC evaluation for EDIH maturity framework (Figure 1).

Digital Maturity assessment: Tools Identification & Analysis



Preliminary analysis of existing digital maturity assessment methods and tools available in the market (implemented by third parties, both public and private)

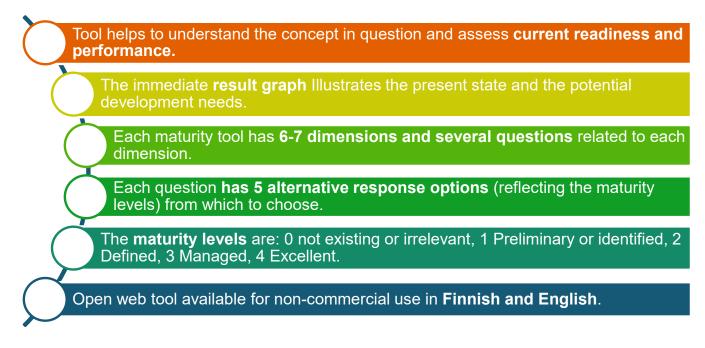
- 1. DIHNET Champions Challenge, DIHNET project
- 2. MDI 4.0 Model for Industry 4.0. TECNALIA, Spain
- 3. VTT's DigiMaturity tool, AI DigiMaturity and Manu Maturity, Finland
- 4. ACATECH MATURITY INDEX, Germany Academy for Science and Technology, Germany
- 5. The IMP³rove Digital Innovation Quotidient (DIQ), Germany
- 6. Connecting Europe Facility (CEF) Monitoring, EC
- 7. COTEC Maturity Tools: THEIA, THRUST, Innovation Scoring, Portugal
- 8. The Digital Maturity Assessment Tool (DMAT), Aarhus University Denmark
- 9. DREAMY 4.0, Politecnico di Milano, Italy
- 10. HADA Advanced Digital Self-diagnostic Tool, Industria conectada 4.0, Spain
- 11. ATI- Advanced Technologies for Industry, EC
- 12. Ipar 4.0, Hungary
- 13. The European Enterprise Network, EC

Figure 1. Gabriel Rissola, Senior Scientist, Digital Economy, EC Joint Research Centre, presented digital maturity assessment framework in EDIH workshop on 18th May 2021. They had analysed 13 existing methods and tools. The triplet of maturity tools: DigiMaturity, AI maturity and ManuMaturity were listed in top 3.

In addition to the basic triplet, VTT has published the Cyber maturity tool and the extension of AI maturity tool for EIT cross KIC AI activity. This extension has few extra questions and is implemented in several European languages, such as: Deutsch, English, Finnish, French, Italian, Polish and Spanish.

Figure 2 lists the commonalities of the maturity tools and Figure 3 the functionalities available for an external visitor willing to complete self-assessment with a maturity tool. First, the respondent must register and confirm his/her email address. Then he/she can fill in the background information and complete the self-assessment by selecting the most reflective response option for each question. After completing the sections, an immediate result graph is displayed (Figure 4). The respondent can save the graph for future purposes.





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Figure 2. Commonalities of the maturity tools.

Figure 3. Functionality from the viewpoint of a respondent.



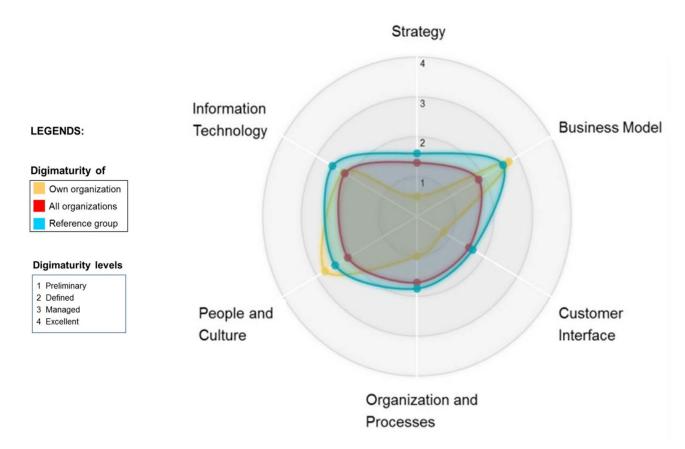


Figure 4. Immediate result graph, sample from Digimaturity.

Figure 5 sketches a potential co-creation pathway between VTT and the respondent's company. First, the respondent completes the self-assessment with a maturity tool. In a result discussion with VTTer usually few preliminary development ideas will arise. It is possible to continue with a maturity workshop or a development project, too.

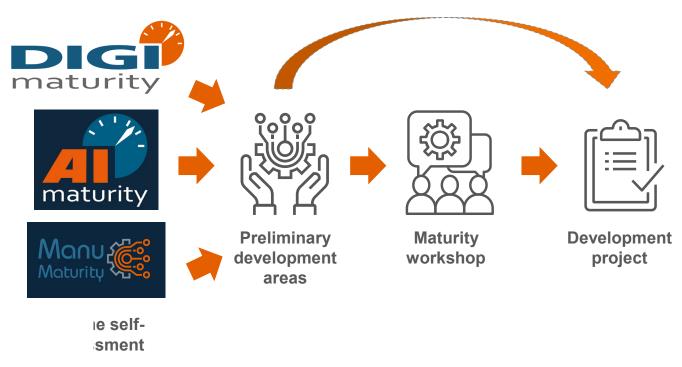


Figure 5. Potential co-creation pathways.



This report presents the general idea of maturity tools and the instances available. The more detailed documentation (with related questions, Data protection declarations, Terms of use etc.) is available in MS Teams <u>Maturity pathways</u>, channel Technical documentation, see Figure 6.

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Figure 6. Technical documentation channel of Maturity pathways in VTT's MS Teams.

2. Five maturity tool instances

There are five open maturity tool instances published by VTT. They are DigiMaturity, AI maturity, ManuMaturity, EIT.AImaturity and CyberMaturity. See Table 2 for the URLs and implemented languages.

Table 1. Open instances of VTT's maturity tools.

ΤοοΙ	URL	Languages
DigiMaturity	https://digimaturity.vtt.fi/	EN, FI
AI Maturity	https://ai.digimaturity.vtt.fi/	EN, FI
ManuMaturity	https://manumaturity.vtt.fi/	EN, FI
EIT AI maturity	https://eit.aimaturity.vtt.fi/	DE, EN, ES, FI, FR, IT, PL
CyberMaturity	https://cybermaturity.vtt.fi/	EN, FI

Each maturity tool has unique dimensions and questions related to the dimensions. Figure 7, Figure 8 and Figure 9 display the topics of the questions in each maturity tool. Unfortunately, the figure of dimensions in Cyber security still is missing. The detailed questions with response options are available in MS Teams Maturity pathways / <u>Technical documentation</u>, see Figure 6.

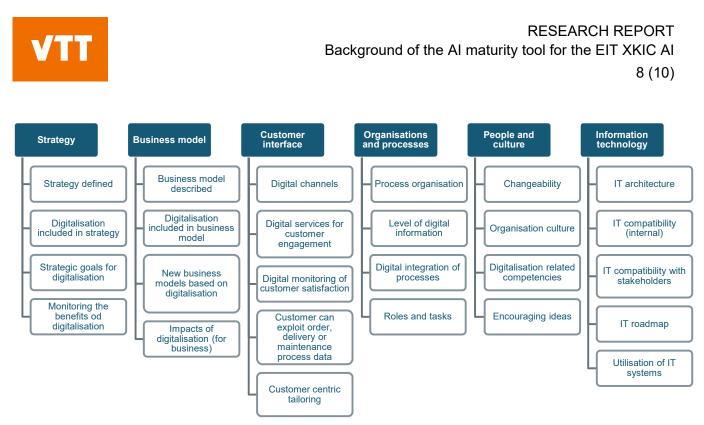


Figure 7. Dimensions of the DigiMaturity tool.

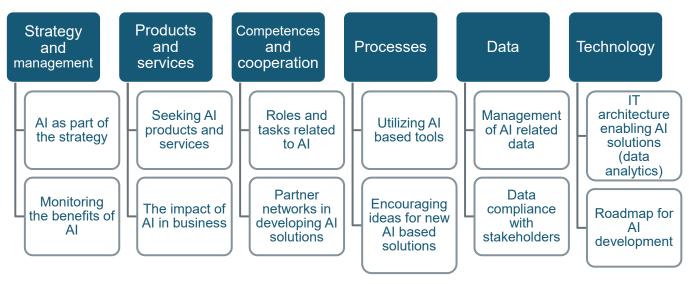


Figure 8. Dimensions of the AI maturity tool.



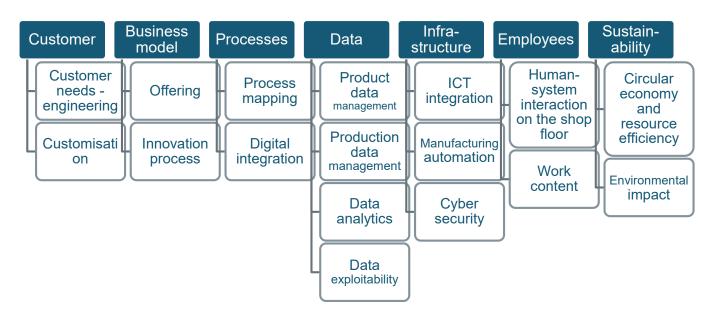


Figure 9. Dimensions of the ManuMaturity tool.

3. EIT AI maturity tool

EIT AI maturity tool was developed in EIT cross KIC AI activity funded by EU. The original AI maturity tool was extended with few extra questions and the extended service provided with five extra languages (DE, ES, FR, IT and PL).

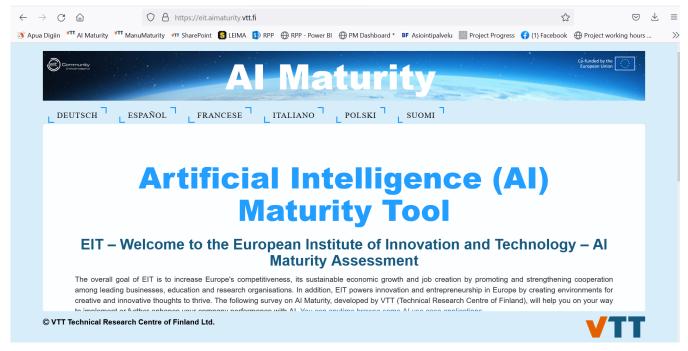


Figure 10. EIT AI maturity at https://eit.aimaturity.vtt.fi/

In addition to the extra languages, EIT AI maturity tool data base contains few columns that do not exist in the other tools, such as language and three fields for background questions.



4. Summary

This report describes briefly VTT's maturity tools and overview of the deployment of AI maturity tool for the EIT cross KIC AI activity in Spanish, French, Deutsch, Italian and Polish in addition to the already existing implementation in English and Finnish. Further, also data protection declarations and terms of use were translated and attached to the service. Detailed technical description of the implementation is available in the VTT internal report.

EIT cross KIC AI activity will invite companies to access their AI maturity in 2022. In case the project continues, VTT will provide reports on the responses to the native contact persons in Table 4. To mention some maintenance ideas: the backup process could be reviewed, and some elements updated. The detailed development ideas are listed in VTT JIRA on the <u>Maturity tools' Kanban board.</u>

Language	Name
GE and PL	Adrian Bablok
IT	Rosanna Macrina
FR	Cecile Schott
ES	Blanca CHOCARRO

Table 2. Native contact persons

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