

One Stop Shop for Digital Support



Supply Chain Risk Management: Strategies for Success



20.06.2024

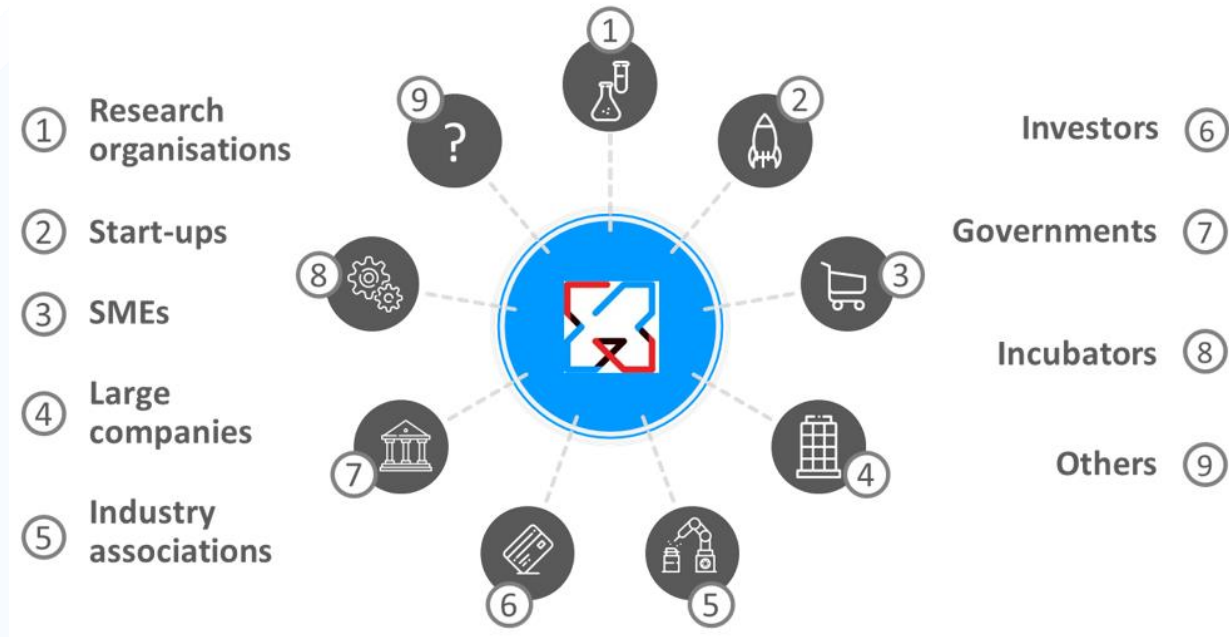
Who We Are

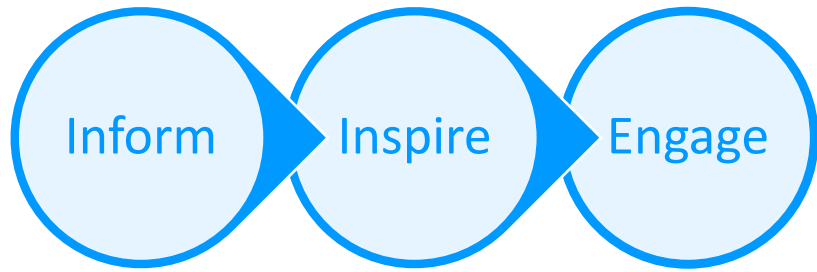
One Stop Shop Digital Support for the Industry



Mission

- We support Luxembourg's Manufacturing Companies / Industry in its Digital Transformation, **Industry 4.0** and Innovation matters
- **National** platform to bring Requirements and Solutions together
- Enlarge DIH **Network** & Foster Collaboration between Companies, Providers, Research and other Actors
- Extend towards the **Greater Region** & Integrated in **European** network of Digital Innovation Hubs

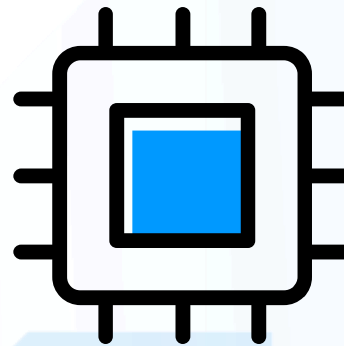




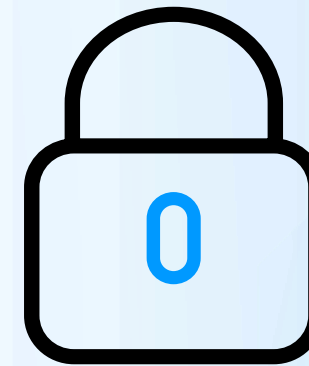
Manufacturing for the future

- Industry 4.0
- Automation and data exchange
- Internet of Things (IoT)
- Artificial Intelligence (AI)
- Robotics
- Data analytics

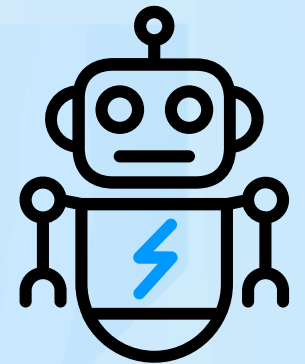
Unique competences in:



**Super
Computing**



**Cyber
Security**



**Artificial
Intelligence**



TEST
BEFORE
INVEST



SKILLS
AND
TRAINING



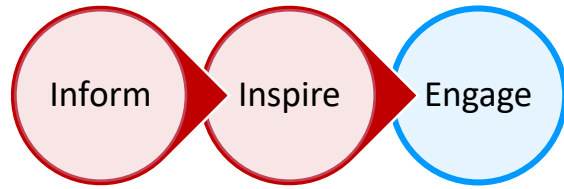
SUPPORT TO
FIND
INVESTMENT



INNOVATION
ECOSYSTEM
NETWORKING

Who We Are

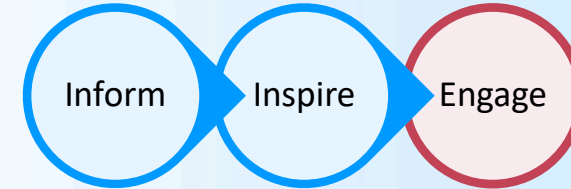
Program & Services



- L-DIH **TALKS** → Focusing on Solutions
- L-DIH **TECH TALKS** → Focusing on Technology
- L-DIH **SKILLS** → Focusing on Skills & Training
- L-DIH **ON TOUR**
- L-DIH **CROSS-BORDER TOUR**
- **Best-Practises & Awareness** Session
- Etc.



PROGRAM



- Digital Maturity Assessment
- Cybersecurity Maturity Assessment
- Digital Skills Assessment
- Digital Roadmap Support
- Investments Support
- Digital Industry Trainings Catalogue
- Test Before Invest facilities Catalogue
- L-DIH Market Place

SERVICES



L-DIH TALKS '24

our popular webinars series ...

L-DIH TALKS '24

Episode 3

Why cybersecurity is a must-have for the manufacturing industry

Friday 21 June 2024 | 11:00 - 12:00

Online

21/06/2024

L-DIH TALKS '24
L-DIH Talks | Cybersecurity is a must-have for manufacturing

Best Practices Sharing

DIH TALKS – our popular webinars series

Close to 800 registrations in '22
More than 450 participants

L-DIH TALKS '23 – Our Program

<p>L-DIH TALKS '23 Special edition</p> <p>Luxembourg Digital Innovation Hub (LDIH) Supporting your digital transformation</p> <p>Friday 24 March 2023 from 11:00 - 12:00</p> <p>Online</p>	<p>L-DIH TALKS '23 Special edition</p> <p>Revealing the latest Digital Twin Solutions and Innovations for Manufacturers</p> <p>Friday 18 April 2023 from 11:00 - 12:00</p> <p>Online</p>	<p>L-DIH TALKS '23 Episode 2</p> <p>Temple advantages of additive manufacturing and 3D printing in manufacturing processes. A reality check</p> <p>Wednesday 17 May 2023 from 11:00 - 12:00</p> <p>Online</p>
<p>L-DIH TALKS '23 Episode 1</p> <p>Transforming data into information (I/2): Good practices on data collection and the appropriate use of IoT devices and related standards</p> <p>Friday 16 June 2023 from 11:00 - 12:00</p> <p>Online</p>	<p>L-DIH TALKS '23 Episode 1</p> <p>Transforming data into information (I/2): Easy steps towards business intelligence</p> <p>Friday 14 July 2023 from 11:00 - 12:00</p> <p>Online</p>	<p>L-DIH TALKS '23 Episode 1</p> <p>Transforming data into information (I/2): Better decisions through artificial intelligence</p> <p>Friday 22 September 2023 from 11:00 - 12:00</p> <p>Online</p>
<p>L-DIH TALKS '23 Episode 1</p> <p>Design thinking: A problem-solving approach prioritizing human-centric solutions</p> <p>Friday 20 October 2023 from 11:00 - 12:00</p> <p>Online</p>	<p>L-DIH TALKS '23 Episode 1</p> <p>Subcomputing: An applicable technology for SMEs</p> <p>Friday 13 November 2023 from 11:00 - 12:00</p> <p>Online</p>	<p>L-DIH TALKS '23 Episode 1</p> <p>Boosting manufacturing competitiveness through predictive maintenance: Why and how?</p> <p>Friday 15 December 2023 from 11:00 - 12:00</p> <p>Online</p>

Visit: www.dih.lu/events

DIH ON TOUR '23 Impressions



LHC w/ ULCC



WELCOME
LHC & ULCC
@★LDIH★#



Ceratizit



ROOM #42

Alipa Group



L-DIH PROGRAM

ON TOUR ...



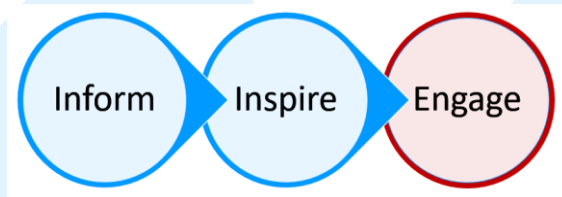
DIH ON TOUR

- DIH ON TOUR:
 - 24. - 26. September
 - 01. + 03. October
 - 08. – 10. October
- In Coop with DLH & ULCC
- Focus on Technology, People, Skills & Training

Gain Insights Surveys

Objectives

- Assess the **current status** on digital transformation
- Identify **common needs or roadblocks**
- Insights and differences between larger players and **SMEs**
- Qualify common needs **to strengthen the cross-border collaboration** within the Greater Region
- Improve** support services, driven by Luxinnovation, L-DIH, FEDIL and other actors



- Nearly 50 responses
- Representing about 10% of Manufacturing Sector

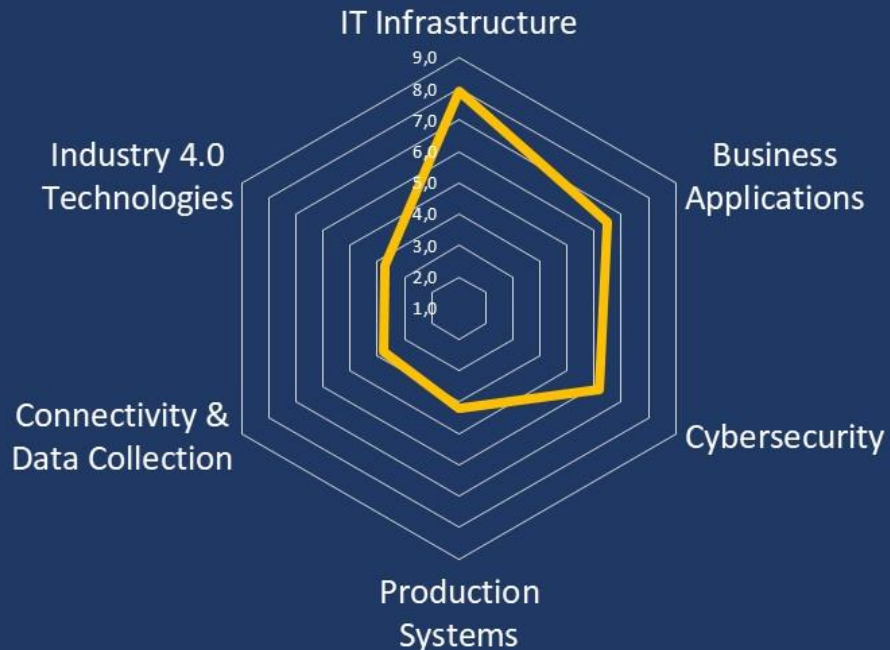
The screenshot shows the website for the Luxembourg Digital Innovation Hub. At the top, there is a navigation bar with links for Home, Dashboard, Events, and Manufacturing Ecosystem Mapping. On the right, there are options for language (EN) and a Log in button. Below the navigation, there is a date (15/03/2022) and a main heading: "Participate in the Digital Transformation/ Industry 4.0 Survey". A large banner features the Luxembourg Digital Innovation Hub logo, the text "Digital Transformation Industry 4.0 Survey", and logos for Luxinnovation and FEDIL. Below the banner, there is a paragraph of text: "The Luxembourg Digital Innovation Hub is launching a survey on the 'Digital Transformation/ Industry 4.0' of manufacturing companies in Luxembourg and the Greater Region." This is followed by two more paragraphs explaining the survey's objective and its anonymous nature. At the bottom, there is a dark blue button labeled "Digital Transformation / Industry 4.0 Survey" with a language dropdown menu set to "English (United States)".

Gain Insights Surveys



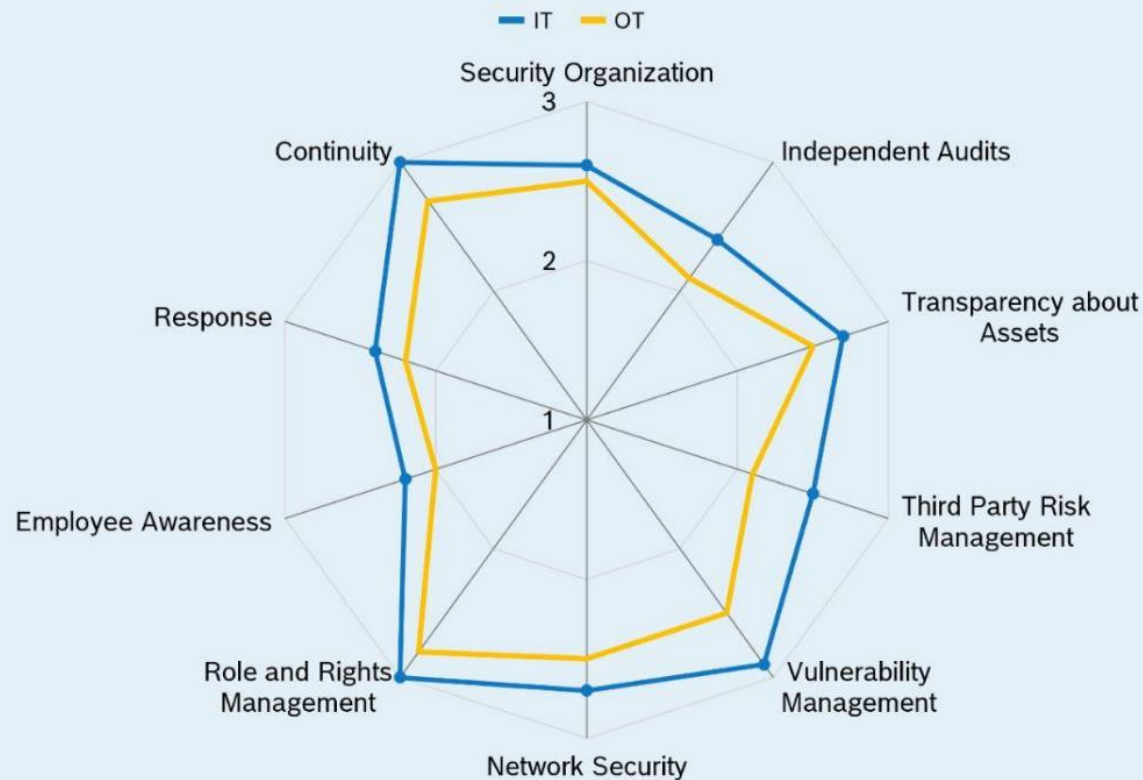
DIGITAL TRANSFORMATION / INDUSTRY 4.0 SURVEY

- Maturity -



- Quite well on overall IT Technologies
- Maturity on level on the Operational Technology (OT) indicates potential for improvements
- Still less advanced when considering the so called IT & OT Convergence
- Obtaining relevant data is a prerequisite when turning data into measurable benefits and requires more attention

Gain Insights Surveys

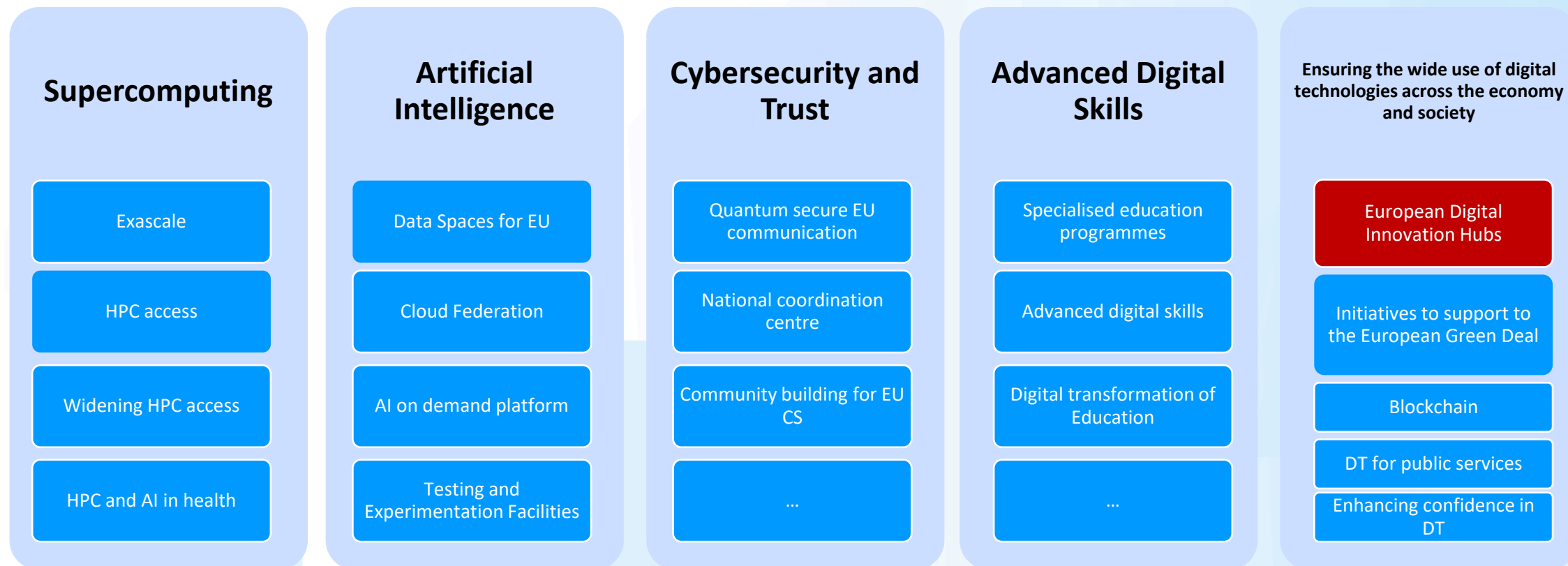


Source: CyberCompare (a Bosch company) Cybersecurity Benchmark Report 2023

- manufacturing facilities are increasingly networked through IT as a result of advancing digitalization
- OT security is still not at the same level of maturity as IT security
- largest negative deviations in Vulnerability and Third Party Risk Management
- Employee Awareness & Management in OT is the weakest area (generic user accounts, PCs w/o end point protection, etc.)

The Digital Europe Program

Quick overview



Our E-DIH Consortium & Partners



OUR CONSORTIUM

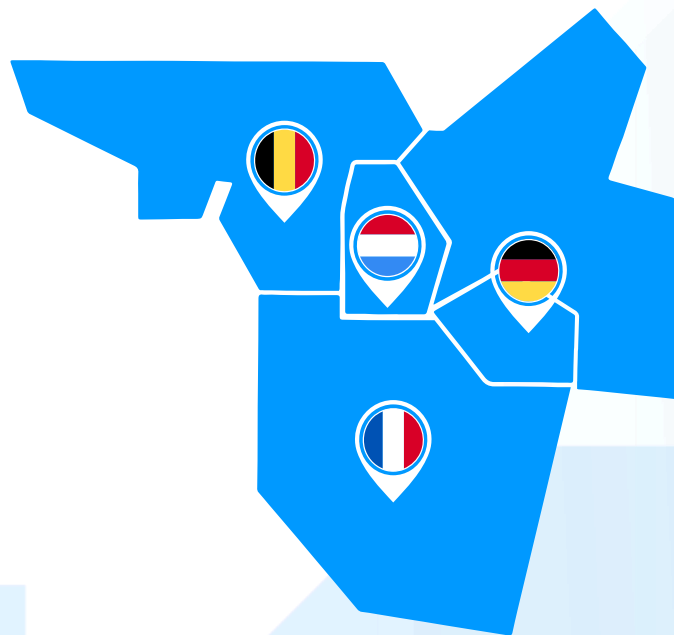


ASSOCIATED PARTNERS



From Local to European

Proximity matters



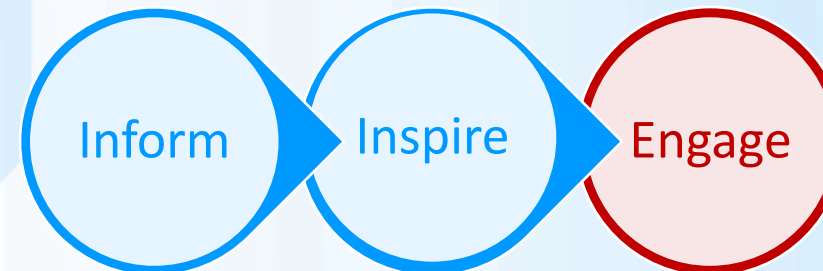
Our Services In a Nutshell

-  Digital Maturity Assessment
-  Cybersecurity Maturity Assessment
-  Digital Skills Assessment
-  Digital Roadmap Support
-  Investments Support
-  Digital Industry Trainings Catalogue
-  Test Before Invest facilities Catalogue
-  L-DIH Market Place



Our L-DIH Services

- Focus on digital **assessments**, **pre-technology testing**, support on **skills & training** programmes, digital **roadmap advisory**
- Services are intended to support companies to **initialize and identify** to **prepare and accelerate** their **digital innovation**
- Low-threshold entry** for manufacturing companies and the research institutes to establish contact, build trust and confidence to enlarge their **collaboration** mid-term



Greater Region & E-DIH

What's Difference it Makes

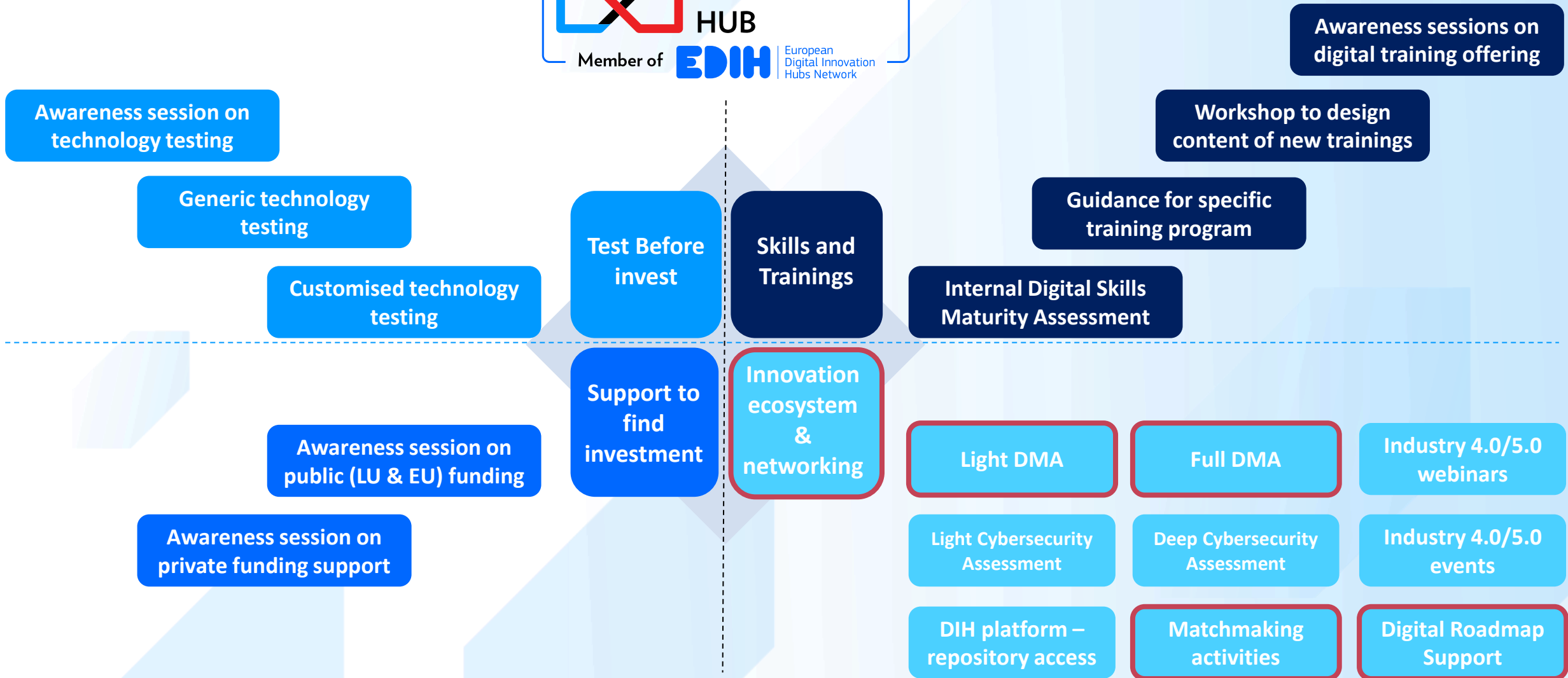


Before



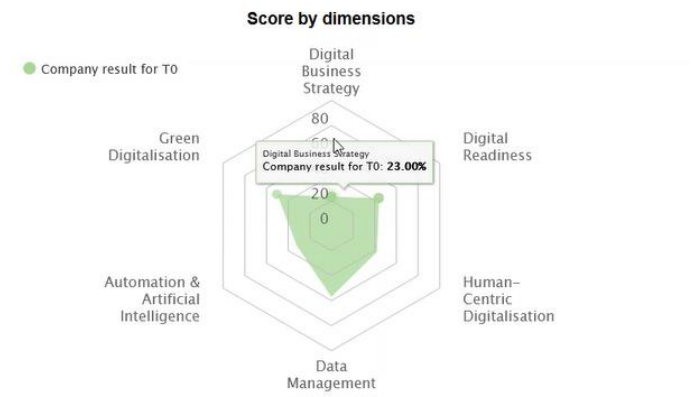
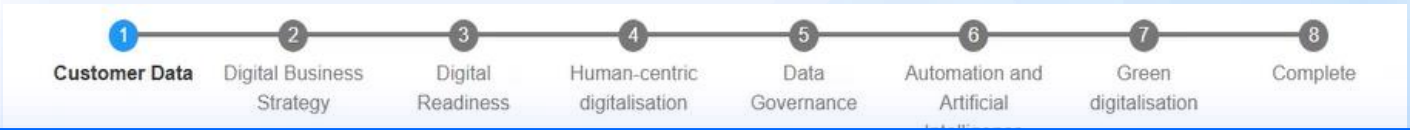
Today

Our Services Overview



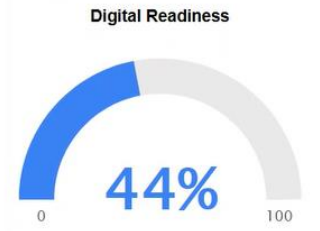
Digital Maturity Assessment

Europeanwide & Sector-specific Benchmarking



Dimensions explained

These statistics are derived from your answers in the DMA tool. You can compare your situation to other users across Europe, where 0% means you're too far behind everyone and you don't have any digital maturity and 100% means you're a leader in EU.



Digital Maturity Assessment (DMA)

Full DMA

Strategy	Process and Value Stream	Methods and Tools
<ul style="list-style-type: none">Strategic Target PlanningStrategic Implementation PlanningTechnology and Innovation Management	<ul style="list-style-type: none">Design of the Value StreamMaterial ReplenishmentSmart Machines and CommunicationOperational Data MonitoringRemote Access to MachinesReal-Time Production Scheduling and Control SystemHuman-Machine InterfaceAvailability of Information at WorkplaceProduction and Logistics LevellingAdaptability and Quick ChangeoverInternal Transport Handling and StorageExternal Transport	<ul style="list-style-type: none">Continuous Improvement ProcessProduct DesignCustom Design and ManufacturingDigital Representation of the ProductionCompany-wide NetworkDigital Production Planning and SchedulingDigital Control of Internal LogisticsDigital Control of External LogisticsUse of Simulation ModelsExistence of IndicatorsUtilization of IndicatorsTotal Productive MaintenanceResources and Ecological Sustainability
Organization		
<ul style="list-style-type: none">StandardizationProcess Definition and DocumentationWorkstation Layout		
Personnel		
<ul style="list-style-type: none">TrainingChange ManagementWorking Time ModelsQuality-Awareness of EmployeesInnovation Culture		

5 Dimensions with 36 Modules:

- 4 Years
- 100 Maturity Assessments
- 30 Case Studies

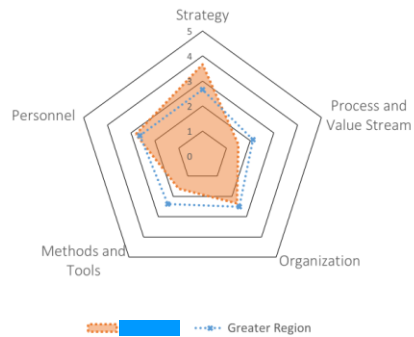


Digital Maturity Assessment (DMA)

Full DMA - Example

Brief on 5 dimensions

vs Greater Region Average



Compared to your peers in greater region,

- ✘ You have a higher maturity in **strategy** dimension for having a long-term digital strategy for production
- ✘ You are at the same level of digital maturity for **personnel** and **organization**
- ✘ You have a lower maturity in the technical dimensions **process and value stream** and **methods & tools**

To gain competitive advantage it is recommended to increase your digital intensity by adapting advanced digital tools for your operations (e.g., data analytics, IT/OT integration etc.)

Strengths

Based on assessment and interactions



is a company that has a clear vision for its digital transformation and is taking steps to achieve it. Some of the strengths that stand out from the full digital maturity assessment and interactions are:

- ✘ The company has long-term goals for digitalizing its production processes and adopting new technologies that can improve its efficiency and competitiveness.
- ✘ The company uses an ERP solution that integrates its business operations and allows for better data management and analysis.
- ✘ The company has up to date KPIs that reflect its performance and progress and uses them regularly for decision making and improvement.
- ✘ The company has a positive change management culture, where most of the employees accept change and are open to learning new skills and using new technologies.

These strengths show that is well-positioned to leverage the benefits of digitalization and innovation.

Pain points and blockers to Digital Transformation

Based on assessment and interactions



faces several challenges and barriers that hinder its digital transformation journey. Some of the technical challenges listed below:

- ✘ Communication with the machines is currently unidirectional, which means that machines can receive data (e.g. programs) but don't send information to a central system. This limits the visibility and control of the production processes
- ✘ The machine defects are manually monitored, which may cause unplanned downtime.
- ✘ High inventory levels or frequent material shortages, which affect the customer satisfaction and profitability
- ✘ No remote access to the production machinery, which prevents timely troubleshooting and maintenance

To overcome these challenges, needs to invest in modern technologies that enable remote access to production machinery, automate production scheduling, integrate machine data using an MES system, and provide real-time display of critical information.

Future steps

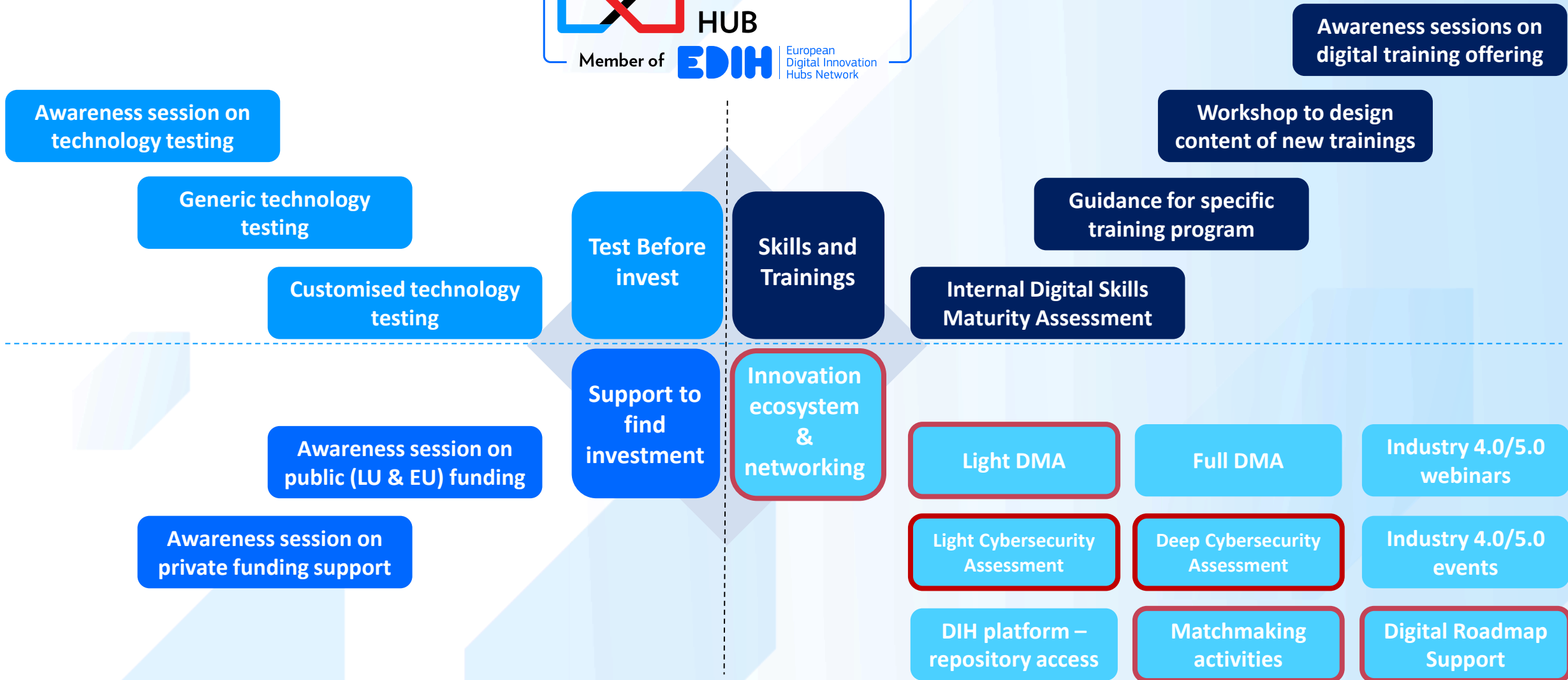
Potential improvement projects (Shopfloor)



Based on the shopfloor visit and interactions that followed, we believe the following projects are interesting to pursue to enable the digital transformation of your production process. These projects aim to leverage the data generated by your machines and use it to optimize your performance, quality, and maintenance.

- ✘ **Data collection:** is fully retrofitted by Inexo and this gives the possibility of data collection from the machine. An initial first step ideally would be to collect the raw data, clean the data, label the data, and load the data to preferred databases (cloud or edge devices).
- ✘ **Retrofitting:** Based on the learning from Data collection of it is highly recommended to retrofit other machines to enable data collection and analysis for them as well. This will help you to have a holistic view of your shopfloor and identify potential areas of improvement.
- ✘ **Data Analytics for real time monitoring:** The transformed data from the first project can be used to create a data lake/ data warehouse which can further be used for modelling and analysing. The desired outcomes could be to monitor the health of the machine and to visualize key machine KPIs. This project could be your first step towards predictive maintenance, as you can detect anomalies and faults before they cause downtime or damage.
- ✘ **Skills & Training:** Upskill your operators by offering data related courses or using test-before-invest microservice offer from L-DIH. This will help you to build a data-driven culture and empower your workforce to make informed decisions based on data insights.

Our Services Overview



Luxembourg House of Cybersecurity Services

National Cybersecurity Competence Centre

- Competence and Capabilities Building
- Research, Data and Innovation
- *NCC-LU*



FIT4CYBERSECURITY - is a self-assessment tool designed for a non-expert audience to estimate in a general way the degree of maturity of its security posture and obtain some basic recommendations.

This tool can be complemented by:

FIT4CONTRACT, to support business owners in verifying if contracts for the procurement of ICT services cover the essential information security aspects.

FIT4PRIVACY, to provide business owners with a good initial overview of their maturity in the field of privacy and data protection (as required by the GDPR).



TESTING PLATFORM - holds the tools and services that will help organisations to perform basic tests on their most commonly exposed infrastructures, starting with email and web servers.



TOP - aims to support its users with evidence-based information on cybersecurity emerging threats, in order to facilitate their decision-making processes regarding the prevention strategies to be undertaken.



TRUST BOX - is the ideal toolset to raise cybersecurity awareness and empower all users with better cyber hygiene.



MONARC - is a tool and a method allowing an optimised, precise and repeatable risk assessment.

Computer Incident Response Center Luxembourg



- CSIRT (Incident Coordination and Incident Handling)
- Cyber Threat Intel and support tools
- *CSIRT NIS*



TYPOSQUATTING FINDER is a free and public service to quickly find typosquatted domains to assess if an adversary uses any existing fake domains. You can enter a domain to discover potentially typo-squatted domains. An advanced option allows you to select the algorithms used.



LOOKYLOO is a web interface that captures a webpage and then displays a tree of the domains that call each other. Lookyloo can be used to test unknown or potential malicious links safely.



PANDORA is an analysis framework to discover if a file is suspicious and conveniently show the results. You can safely use this free online service to review files or documents received by a third party.



URL ABUSE is a public CIRCL service to review the security of an URL (Internet link). Users regularly encounter links while browsing the Internet or receiving emails. When there are some doubts regarding an URL (e.g. potential phishing attacks or malicious links), users can submit an URL for review, and a take-down process of the fraudulent content is initiated.

More public services are listed on <https://www.circl.lu/services/>

CIRCL ALSO OFFERS ACCESS TO PRIVATE SERVICES OR CLOSED COMMUNITIES:

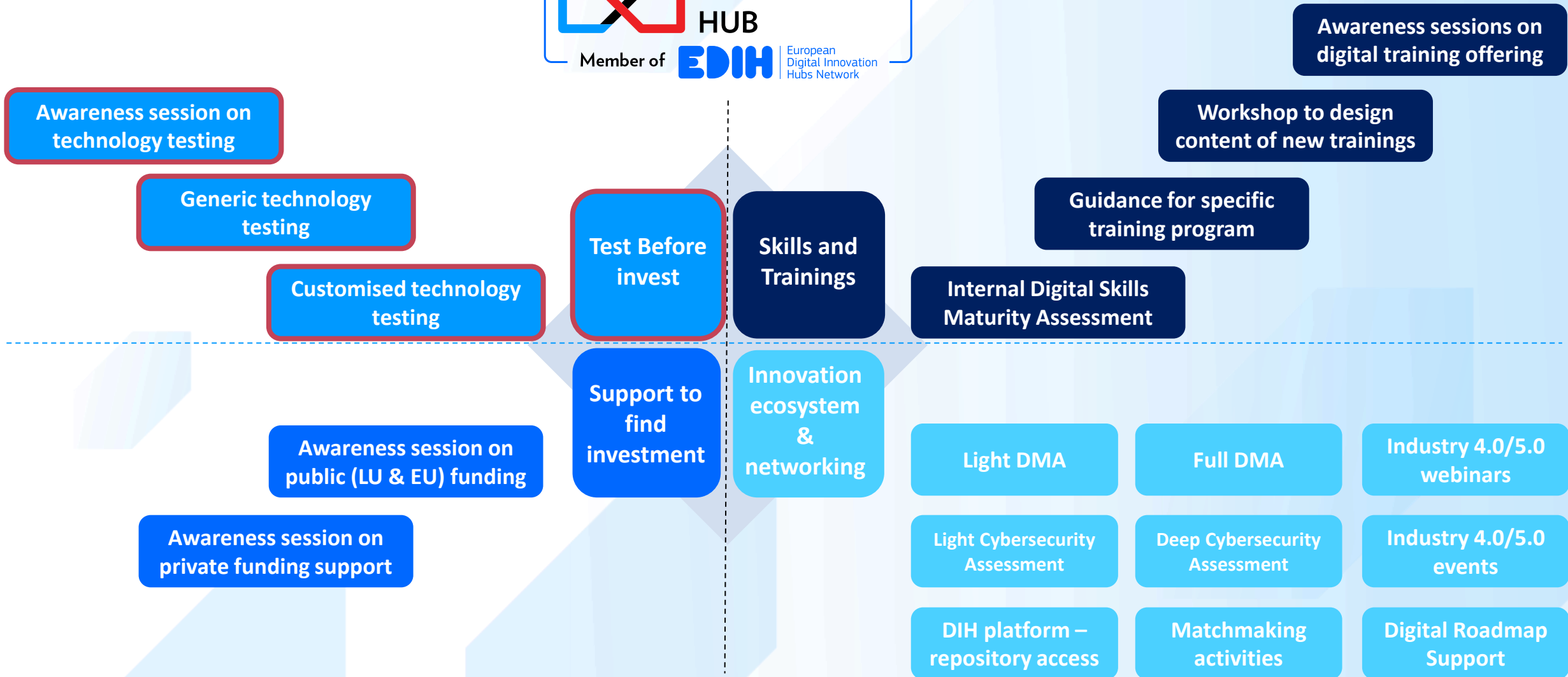


MISP - Open Source Threat Intelligence and Sharing Platform (formerly known as Malware Information Sharing Platform) access is available on request. MISP gives an overview of the current trends of attacks and threat indicators. It is a sharing platform that enables teams to collaborate and provides API access to ingest the information for detection and remediation into the security tools by the organisations.



AIL LEAK DETECTION AIL Project is an open source framework to collect, crawl, dig and analyse unstructured data, like information leaks publicly available on the Internet or Darknet. Organisations in Luxembourg can benefit from the service by being notified based on contextual keyword lists.

Our Services Overview



Service Proposals for a Client

Test before Invest 1/2

Awareness session

Generic tech. testing

Custom. tech. testing



Exploration Workshop

Map business challenges, data
& DA/AI techniques

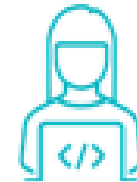
2-4 hours workshop to identify
use cases



Capacity Workshop

Assess partners DA/AI
readiness

2-4 hours workshop to specify
the approach



Hands-on Workshop

Discover the technologies &
start to use with own data

2-4 hours hands-on workshop
+ remote work + consolidation
meeting

Service Proposals for a Client

Test before Invest 2/2

Awareness session

Generic tech. testing

Custom. tech. testing

Outcome – Deliverables

Proof of Concept (PoC) / Prototype development plan

Business case description

Data description

Proof of Concept / Prototype Requirements

Resources estimate (schedule, effort, computation...)

Risks & technical challenges



Results of the test activities

Software code developed during the testing, models, normalised data



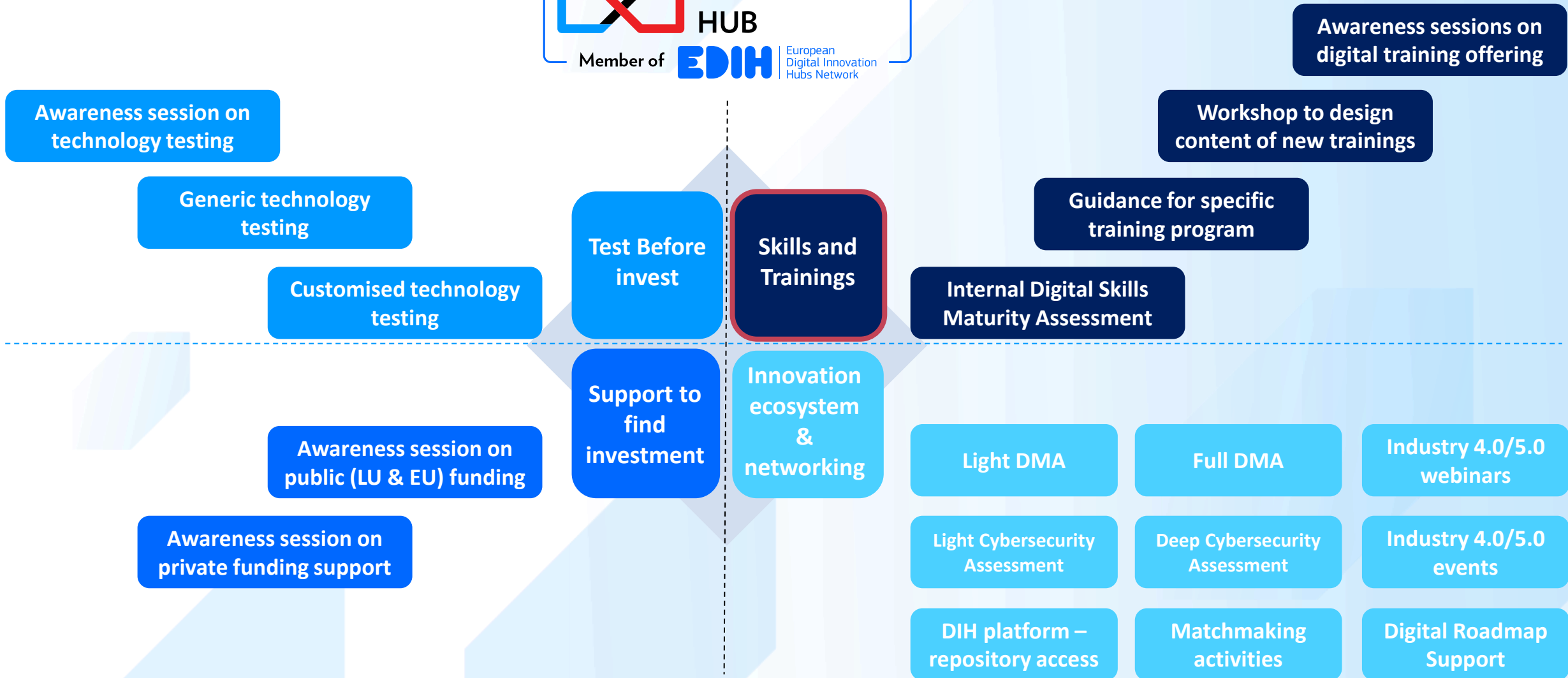
Can be used

As a reference for the PoC development project

To request quotes from service providers

As a support for co-funding request

Our Services Overview





Skills & Training Training Catalogue

■ Launched of the digital transformation training catalogue for the manufacturing industry covering:

- Automation
- Connected Industry
- Cybersecurity
- Digitalization
- Emerging Technologies
- Industry Outreach
- Industry Data Science
- Supercomputing

■ **Consolidated training** offering by Chambre de Commerce, Digital Learning Hub (DLH), Ebl, House of Training / FEDIL, iNDR, Keyjob, LIST, Luxembourg House of Cybersecurity (LHC), Luxinnovation, Luxprovide, MARKCOM, Solvay Lifelong Learning, University Luxembourg Competence Centre (ULCC), ...





Skills & Training

Digital Skills Maturity Assessment

Objectives

- Identify Training Need & Desires
- Support the Development of Tailor-made Training Programs
- Find appropriate Training Partners

Usually performed in close Cooperation with Management & HR

Available in 5 Languages

- English, French, German, Luxembourgish, Portuguese

Digital Skills Maturity Assessment

Digital Skills Maturity Assessment (DSMA)

The main purpose of this questionnaire is to identify the training needs and, subsequently, propose a tailor-made **training programme** for the company.

This survey is available in **5 languages** and it should take around **30 minutes** to complete it.

🌐 Change language **English - English** ▾

Digital Skills Maturity Assessment (DSMA) [Workshop Test]

This survey was developed by the University of Luxembourg Competence Centre (ULCC) in the context of the European project **Luxembourg Digital Innovation Hub (L-DIH)**. It aims at assessing the company's maturity, and its workforce, in terms of Digital Skills. The results will therefore help us to identify the needs and propose a tailor-made training programme for the company.

Please note that your participation is entirely **voluntary** and your responses are completely **anonymous** and **confidential**. If there are items you do not want or cannot answer, please feel free to tick the box N/A (Not Applicable).

This survey will take up to 30 minutes to complete it. We would very much appreciate if you could please fill in this questionnaire within the next 3 days.

Thank you in advance for your cooperation!

PRIVACY POLICY

CONSENT

In order to participate in this survey, we need your consent and agreement on the following:

1. I have read the information provided above and understand the purpose of this questionnaire.
2. I agree that my personal data will be collected anonymously and treated as strictly confidential in accordance with the GDPR (General Data Protection Regulation).
3. I acknowledge that I have read and expressly accept the current legal notices specified on the University of Luxembourg Competence Centre's website: <https://www.competence.lu/mentions-legales/>

To continue please first accept our survey privacy policy.

Next



PROACTIVE

REACTIVE



START

Thank You !!!

& get in contact ...



■ Luxembourg DIH

LUXINNOVATION GIE

5, avenue des Hauts-Fourneaux

L-4362 Esch-sur-Alzette

contact@dih.lu

 www.dih.lu

 [Luxinnovation](https://www.linkedin.com/company/luxinnovation)

 [@Luxinnovation](https://www.facebook.com/Luxinnovation)
[@LuxTradeInvest](https://www.facebook.com/LuxTradeInvest)

 [@Luxinnovation](https://twitter.com/Luxinnovation)
[@LuxTradeInvest](https://twitter.com/LuxTradeInvest)