BETTER FACTORY

Grow your manufacturing business

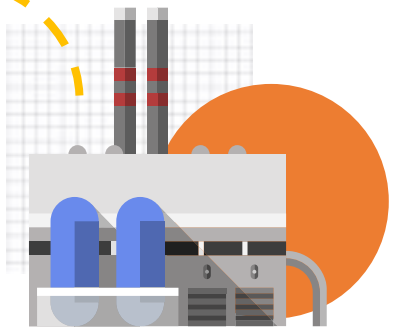
What is Better Factory?

Better Factory is an initiative funded under the European Commission Horizon 2020 programme. The project started in October 2020 and ends in September 2024.

The objective of the project is to:

"*provide technology for SMEs to become fully connected cyber-physical-systems, transforming them into Lean-Agile production facilities capable of manufacturing new and personalized products alongside existing products*".

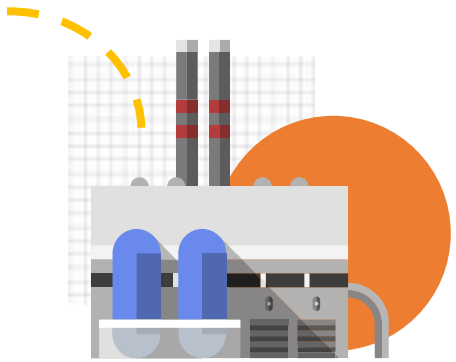
Cascade funding project inviting SME companies, technology suppliers and artist to develop new products and production technology.



Why Better Factory?

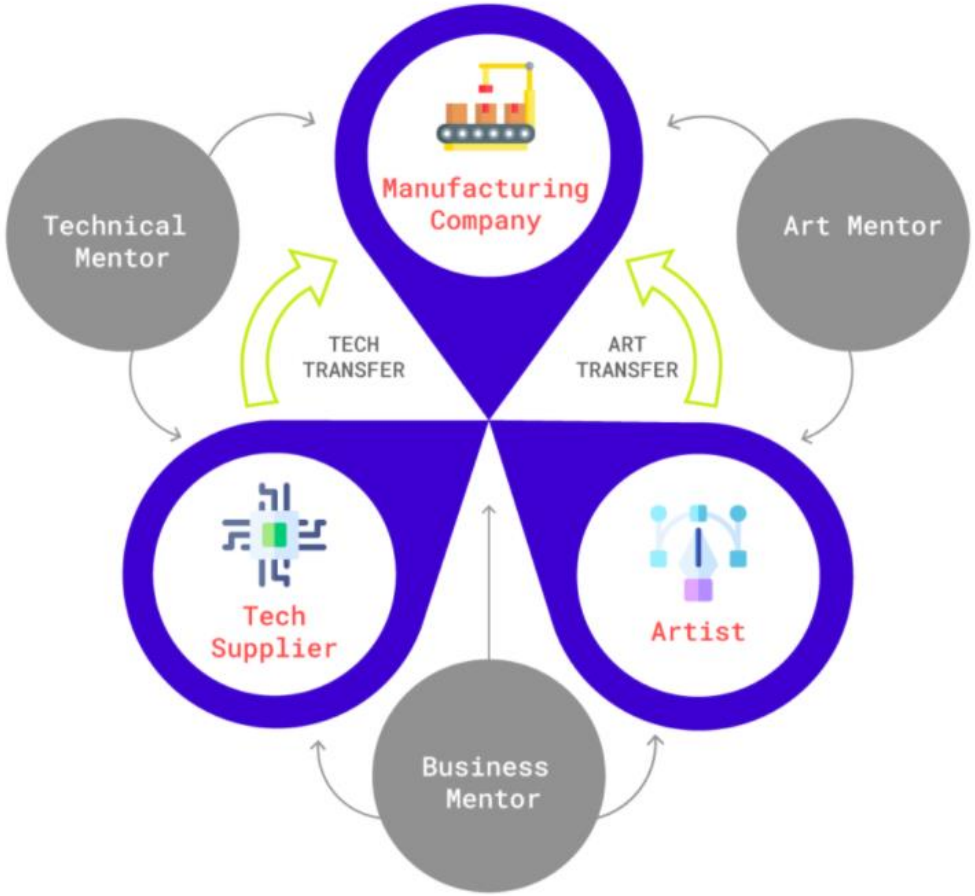
We invite European **Manufacturing SMEs, Artists, and Technology suppliers** to engage in a set of one-year collaborative experiments to redesign manufacturers product portfolio and manufacturing processes.

- The project will enable Manufacturing SMEs and Mid-Caps to **improve manufacturing** processes and **enter new markets** with customisable products or service portfolios.
- Artists with an industrial background to **create new business models** for themselves and reach new prospective clients.
- Technology Suppliers to reach out to **new potential customers and test technologies** in real-life situations with low financial risk.



16 Knowledge Transfer Experiments (KTE)

- Organized Open calls and Match making
- Consortium of three actors:
  - SME, Artist and Tech supplier
- Funded through BetterFactory
- Technology, artist and business mentoring
- Supported by RAMP market platform, RAMP IoT platform and digital eneblers (APPS)
- Expected results:
  - Technical: digital solution to SME challenge
  - Artistic: challenge driven, opportunity driven
  - Testing of market platform and digital tools developed in BetterFactory project



Technology provided by Better Factory

Better Factory provided **cutting-edge tools** developed and tested during the lifetime of the project:

RAMP
Robotics and Automation MarketPlace

A **one-stop-shop** where Manufacturing SMEs and Mid-caps will be able to buy services from Technology Suppliers, Artists, Competence Centres, training providers and financial brokers.

APPS

Advanced Production Planning and Scheduling tools

Digital solutions for resource optimization, resource reconfiguration, logistics management and Cognitive HRI in manufacturing SMEs.

Who are we?

Mentors

In4Art guiding curiosity...

Hermia Yrityskehitys Oy

INOVA+

GLUON

waag technology & society

FundingBox

TIMELEX

MOBILE WORLD CAPITAL BARCELONA

Tech developers

European Dynamics

TOP data science A MORPHO COMPANY

GESTALT ROBOTICS

HOLONIX BRING THINGS TO LIFE

bilBERRY ANALYTICS

INESCTEC

SUPSI

aimen

Cyprus University of Technology

NCRI

Fraunhofer

Experts

Clusters

CLUSTER MOBILIER TRANSILVAN

TECOS

ICT cluster

LATVIJAS PRIVĀTAJĀS UZŅĒMUMU FEDERĀCIJA

BYDGOSZCZ INDUSTRIAL CLUSTER

clutex

PÉCS-BARANYAI KERESKEDELMI ÉS IPARKAMARA

OULUN YLIOPISTO

industrial generation network

Co-ordinator

VTT

Results after two rounds of KTEs

- The Better Factory Method
- 47 digital solutions and artworks from 16 experiments
- RAMP marketplace and RAMP IoT available online
- 11 of 12 APPS tested in at least one manufacturing company

The Better Factory Method

- Method for mentoring manufacturing SMEs, tech providers and artis to achieve successful innovation in the form of new digital solutions and artistic work.
- Toolkit for mentors will be available online after project.
- Regional, national and inter-regional project coordinated by clusters and DIHs.

Results from 16 KTEs

KTE ROUND 1 / KTE ROUND 2

KTE	Business innovation
FOLD	Stone Paper Plant growth tubes
	Stone Paper Lamp
ODC3D	Temp control solution for printing
	KNOTTY Series
RWC	Welded steel door design
DSBSF	Computer controlled connected scale
SMARTHAM	Intelligent Ham Forecasting System
MINIROBOFAB	Recycled powder coating finishes
BCF	Cladding System
IOWA	Generative AR E Label
	IoT Cork + WMS Application
	Bio Cellulose Foam
	Spoiled Wine Kombucha
OCCE	Recyclable Boston Chair
3DAD	Post Processing Robotic Cell + PMP
	Titanium customizable pen
REFINE	Small space Gripper
	Redesigned F1 Fin
	Waste free packaging product
SMART ENVELOPE	Smart Envelope product
STARIOT	IoT Handheld Scanner
SHOES IN CIRCLE	Glue sensor + Roughing gripper
	Circular knitted shoe product

KTE ROUND 1 / KTE ROUND 2

KTE	Art works
FOLD	Stone Paper Shells
ODC3D	Digitally Woven
SMARTHAM	Neural Taste Mapping
MINIROBOFAB	Powdered components
SMARTVIEW	Future Factory VR
IOWA	Cast biomaterials
OCCE	Metal Chair
	Air Chair
3DAD	Trophy
	Mask
MICOCRAFT	MicoCraft Future Narratives film
REFINE	Artifacts of Utopian Scuba Diving
Smart Envelope	Borderwaters
Shoes In Circle	Foot Fingerprint PoC

KTE ROUND 1 / KTE ROUND 2

KTE	Tech prototype innovations
FOLD	Stone Paper Robotic cell
	Stone Paper Printer
ODC3D	LOOP Algorithm
SMARTVIEW	PD&T extension
OCCE	Production reporting & weight app
MICOCRAFT	Mini MyCoCraft Cobot system

KTE ROUND 1 / KTE ROUND 2

KTE	Social prototype innovations
DSBSF	AR Worker Break Rooms Tool
BCF	Found Objects
SMARTVIEW	Animated Factory UI
STARIOT	STEMS WebUI

FOUND OBJECT

IOT CORK

SMART CORK FOR WINEMAKING

WHAT ARE IOT CORK?

It is an internet connected barrel cork to monitor wine production in the cellars along a variety of parameters relevant for the wine production process. The device, which closes the barrel just like any other cork, includes sensors, a battery and is wireless. It comes with a webapp to monitor and plan interventions in the barrels.

WHERE IT CAN BE USED?

In the wine cellars of vineyards across the globe. Currently, the process of winemaking after harvest is still very traditional. IoT solutions have been developed for monitor outside field tasks, but not for inside quality monitoring purposes. Until now. The chemical process occurring inside the barrel determines the quality of the product. This innovation makes it possible to control this process of fermentation/aging.

WHAT ARE THE BENEFITS?

- Improving the quality of the wine through continuous monitoring
- Predicting potential issues over time due to slight changes in the measurements
- Securing specialistic knowledge about winemaking

APPLICATION AREAS

Besides vineyards, the Smart Cork can be used in other processes where liquids require fermentation/aging in barrels. This includes many spirits, like Whiskey, Rum, Tequila, Port, Cognac, Beers.

MORE INFO AND CONTACT

Inventor and designer:
Dejan Krsmanovic Bubamara
projects.bubamara@gmail.com

Better Factory Project contact:

Rodolfo Groenewoud van Vliet
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ABOUT BETTER FACTORY

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BETTER FACTORY

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 951813.

SANDBLASTING ROBOT CELL

ROBOT LED POST PROCESSING OF COMPLEX ITEMS

WHAT IS SANDBLASTING ROBOT CELL?

It is a robotic cell which is capable of sandblasting, anodizing and acid etching titanium printed complex objects. The robotic cell comes with a no-code programming software and a webapp for tailored/personalised requests.

WHERE IT CAN BE USED?

In the manufacturing industry for post production treatment of aluminium and titanium. It cleans metal parts, removes rust and paint, creates surface textures, applied colouring and converts metal surfaces into decorative, durable, corrosion-resistant finishes.

WHAT ARE THE BENEFITS?

- Improved consistency and precision of post-processing.
- Improved quality finishes of the result.
- Improved productivity due to scalability / repeatability and decreased cycle times.
- Increased worker safety due to the robotization of hazardous work.

APPLICATION AREAS

The Sandblasting Robot Cell can be used in areas where complex aluminium or titanium shapes objects are produced, this includes the medical implant industry, aviation industry, shipping, spacecraft, bicycle industry, jewellery, eyeglass frames, golf clubs.

MORE INFO AND CONTACT

Inventor and designer:

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LASRAM
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Better Factory Project contact:

Rodolfo Groenewoud van Vliet
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FOLD PRINTING | CALCIUM CARBONATE PASTE PRINTING

WHAT IS FOLD PRINTING?

FOLD Printing is a printing process and paste recipe based on calcium carbonate, $CaCO_3$, which is mainly found in stones and shells. It consists of a series of recipes to produce pastes and a paste printing extruder, which can be mounted on any type of extruder printer.

WHAT ARE THE BENEFITS?

- Strong, durable, yet lightweight printing
- Renewable printing material and fully recyclable
- Consumes less energy and produces no waste

WHERE IT CAN BE USED?

3D printing with calcium carbonate paste is currently being developed across the globe, due to the many possibilities it has for waste recycling (of stone waste and shell waste) and energy saving, in combination with producing strong and durable prints capable of carrying heavy loads, for inside as well as outside purposes.

APPLICATION AREAS

FOLD Printing can be used to develop local recycling loops based on eggshells, marine shells (like mussels) or stone waste, which all contain high quantities of $CaCO_3$, and can be transformed into 3D printed objects and constructions.

MORE INFO AND CONTACT

Inventor and designer:

Isaac Monté
info@isaacmonte.nl

Project contact:

Rodolfo Groenewoud van Vliet
rodolfo@in4art.eu

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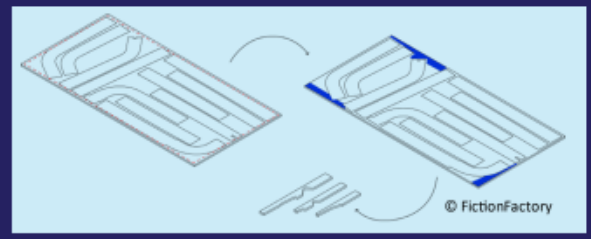
FOUND OBJECTS | A TOOL FOR INTELLIGENT AND RESPONSIBLE NESTING



WHAT ARE FOUND OBJECTS?

FoundObjects is an open-source Grasshopper tool that parametrically creates shapes out of the leftover sheet material from CNC projects. It was developed as an output of the BetterCNCFactory team's work during their time as part of the EU-funded Better Factory project. The BetterCNCFactory team is made up of the SME Fiction Factory (The Netherlands), the artist Jesse Howard (The Netherlands), and the technology provider IAAC (Spain).

WHERE IT CAN BE USED?

The FoundObjects is being used daily in the Fiction Factory (NL) Wood workshop but is applicable in any manufacturing process dealing with CNC based nested manufacturing, including aluminium, steel, plastics, leather, ceramics.

WHAT ARE THE BENEFITS?

- 70%+ reduction of material waste & CO_2 emissions compared to standard CNC nesting solutions with the current version
- 20% less sheets needed for equal output, leading to significant productivity increase
- Open workflow allowing collaborating with external designers

INNOVATIVE AI-BASED WORKFLOW

Step 1: Adding projects with high priority, so called 'now projects'
Step 2: Adding internal projects from the 'waiting list'
Step 3: Adding external products from external collaborators
Step 4: Start nesting
Step 5: Generating new parts out of the leftover space with Found Objects

MORE INFO AND CONTACT

Found objects at Fiction Factory:
www.found-objects.github.io

FoundObjects Edge generator:
github.com/found-objects

FoundObjects Team:

Marije Remigius (SME)
marije@fictionfactory.nl

Jesse Howard (Artist)
info@jessehoward.net

JAAC (Technology provider)

Project contact:

Rodolfo Groenewoud van Vliet
rodolfo@in4art.eu

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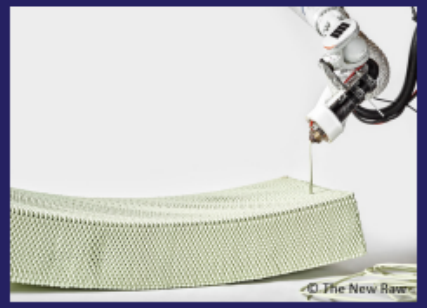
I4MS S·T·ARTS

LOOP | A NEW WAY TO PRINT LARGE-SCALE 3D OBJECTS



WHAT IS LOOP?

LOOP is an algorithm allowing the creation of large-scale 3D printed objects, mimicking crochet or willow weaving. The solution opens new possibilities for 3D printing based on traditional crafts, such as willow techniques, basketry, weaving, knitting and crochet, with a larger bracket of range acceptability.

LOOP, which is re-inventing traditional crafts in additive manufacturing, was developed as an output of the team ODC 3D during the EU-funded Better Factory project. The ODC 3D team is made up of the SME The New Raw (The Netherlands), the artist Gareth Neal (UK), and the technology provider Artific Intelligence (Finland).

WHAT ARE THE BENEFITS?

Makes it possible to use 3rd life (or 3x recycled) waste
Reduces printing time by 50% due open woven structures
Uses less material than solid structures

WHERE CAN BE USED?

LOOP is currently being used by SME The New Raw to produce a series of artistic vessels and a series of playful benches called "Knotty". The possible applications for this new printing method are very diverse, ranging from construction to furniture, from outdoor to indoor.

MORE INFO AND CONTACT

LOOP Team:

The New Raw (SME)
info@thenewraw.org

Gareth Neal (Artist)
info@garethneal.co.uk

Project contact:

Rodolfo Groenewoud van Vliet
rodolfo@in4art.eu

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SMART ENVELOPE | A NEW APPROACH TO ENVELOPE DESIGN AND USE

WHAT IS SMART ENVELOPE?

It is a new type of envelope which was designed to be smarter in use and in reuse. It is a reusable envelope with a personalised QR-code connected to a web platform. The sender of the envelope can decide where the code directs to before sending the envelope. On the other side, the receiver of the envelope can reuse it by turning it inside out and sending it off again, also with the option to decide where the personalised QR-code directs to.

WHERE IT CAN BE USED?

As a carrier of post or packages it can be used for many use cases. As a carrier for post it is useful for cases where a send back request is attached to the original post, for instance government related post. As packaging post is it useful in cases where the receiver of the package has a high chance of wanting to send back. For instance with clothing, or shoes. For exchanging items or anticipated returns, the Smart Envelope may serve as a more efficient alternative to conventional options available today

WHAT ARE THE BENEFITS?

Increased sustainability by keeping materials in use longer.
Increased information services to be attached to the digital layer of the envelope.
Avoiding the need for printing return labels.

APPLICATION AREAS

For sending documents or items per post.

MORE INFO AND CONTACT

Inventor and designer:

PLAST-FARB (www.plast-farb.com) in collaboration with David Rickard and AND-TECH Rafal Pernal

Better Factory Project contact:

Rodolfo Groenewoud van Vliet

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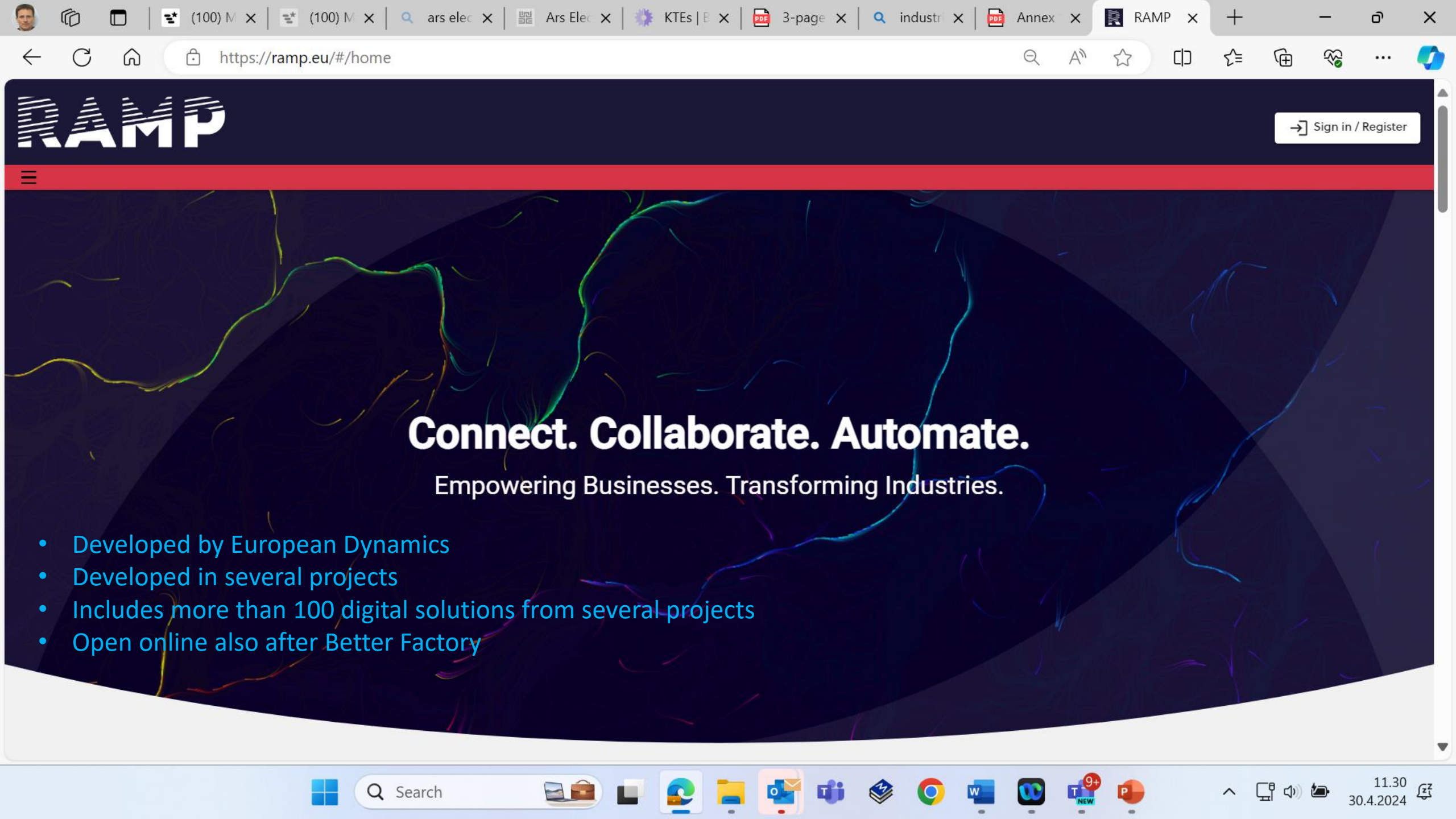
Some artistic work from Better Factory KTEs

Image by Nick Ervink 3DARTDESIGN, 2023


RAMP
Sign in / Register
Connect. Collaborate. Automate.
Empowering Businesses. Transforming Industries.
• Developed by European Dynamics
• Developed in several projects
• Includes more than 100 digital solutions from several projects
• Open online also after Better Factory
https://ramp.eu/#/home
Search
11.30
30.4.2024

Learn about Marketplace

Are you a service provider?

bring production to the next level by connecting to your next technology partner.

Find a partner

Connect with the Right Partners

Find partner organizations based on profiling information, including country, expertise, and services. Our 'Premium' features offer ad and promotion options. Messaging is seamlessly integrated for effective communication. No operational constraints for premium users.

Discover solutions

Power Your Operations with Technology

Find software and hardware solutions for digitization, automation, and robotics. Consider 'Premium' features for ad promotions and hosting. Integration is simple with messaging features. No operational constraints for premium users.

Not sure where to start? Maybe didn't find what you were looking for?

Get local support

Connect with regional Digital Innovation Hub

Find Digital Innovation Hubs in your area and connect with your local ecosystem. Digital Innovation Hubs are one-stop shops supporting companies and public sector organisations to respond to digital challenges and become more competitive.

Ask for a service

Efficient Service Procurement

Specify your needs and requirements, negotiate offers, and track contracts. Propose components from the catalogue. Premium options for offline communication with providers. Support resources available for premium users.

Sign in/Register

View all benefits

This project has received funding from the European

RAMP IoT

Connect to the RAMP cloud

Start by connecting your sensors, robots, machinery and software to the RAMP cloud. We adopt key standardization technologies for data sharing and interoperability, like MQTT protocol and NGSI-LD interface.

Once connected, your sensors, robots, machinery will be readily available in any future applications!

Store data on private cloud

We now offer secure data storage, ensuring that your valuable information is protected and readily accessible whenever you need it.

You can select what you want to store on your private cloud. Your data will be readily available in any future applications!

Discover solutions

Find solutions that meet your needs.

OR

Ask for a service

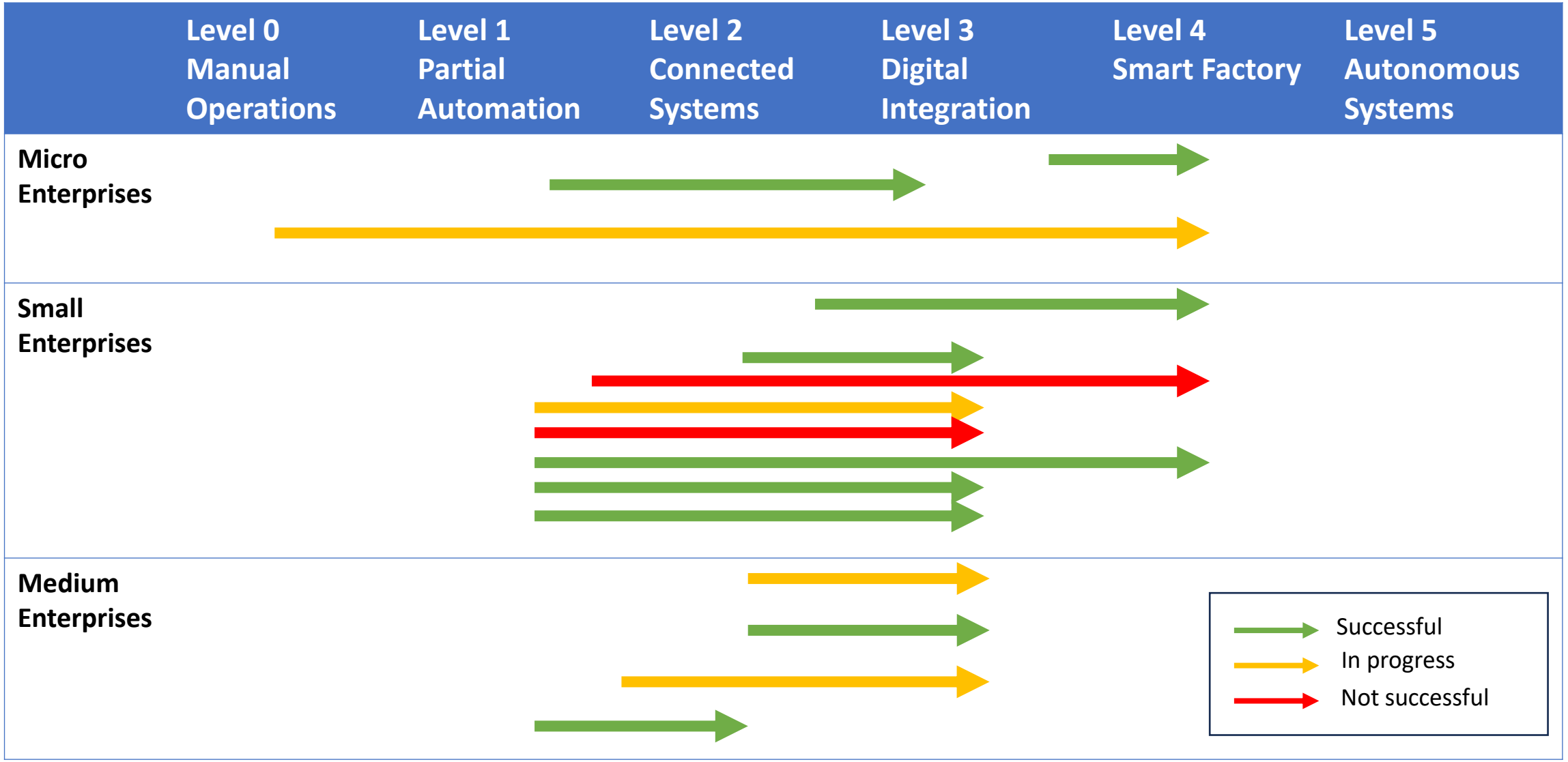
Let us review your needs and recommend Service Providers for you.

Deploy your bespoke solution

Your Service Provider deploys your bespoke solution on your own private repository.

Achieved level of Digitalization

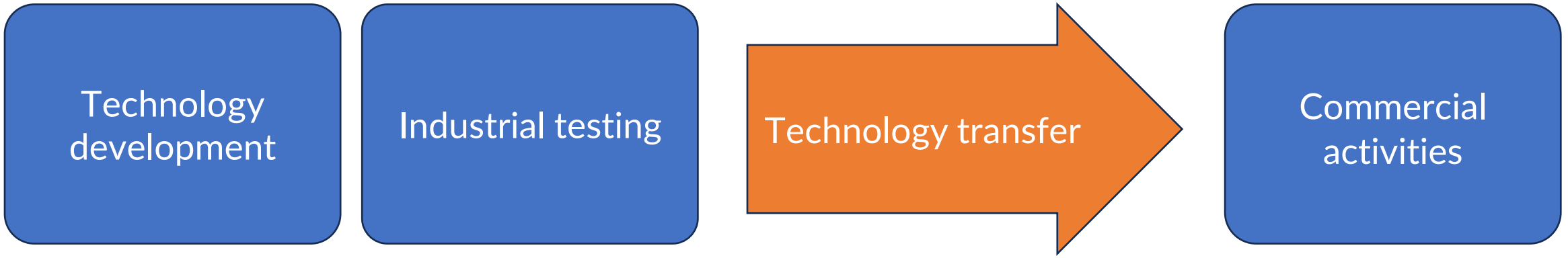
- SMEs before and after KTEs



Challenges remaining

Research organisation

Company



- Light IPR: propritary or open source software tool
- Continued support and maintenance
- Further development and testing needed

Thank you!