

ArcLub^{ONE}

From Ph.D

...to the industry-ready system(s)

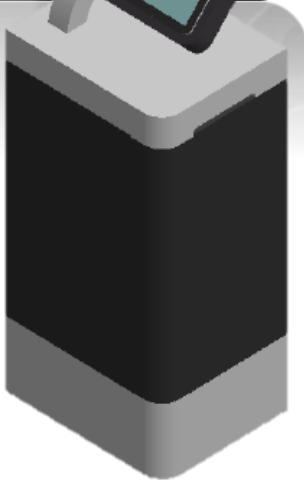
EIT Manufacturing

- . wsparcie na drodze do transformacji cyfrowej
- . support on the path to digital transformation

Damir Grguraš, Ph.D.

June 16, 2021

Solution is
machining with
ArcLub^{ONE}



Ph.D

Patent application

What now?

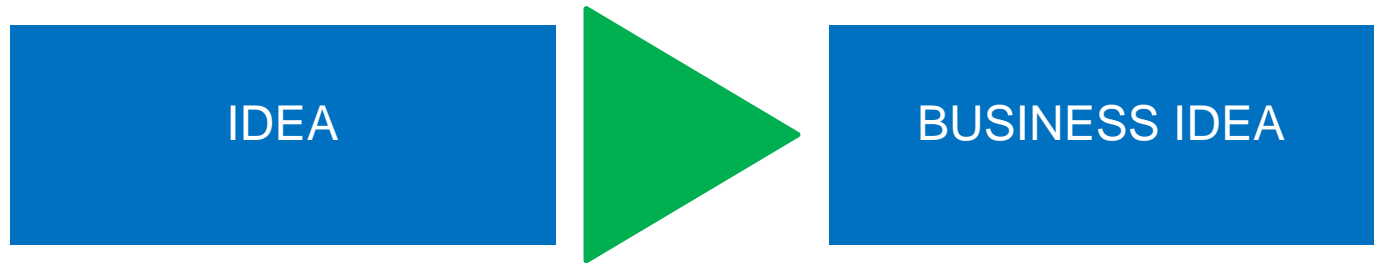
2018: golden award of
Slovenian Chamber of
Commerce

2020: Rector's award for
the best innovation of the
University of Ljubljana



ArcLub One Jumpstarter

Google: Jumpstarter



- > InnoEnergy
- > Manufacturing
- > Urban Mobility
- > Health
- > Food
- > Raw Materials

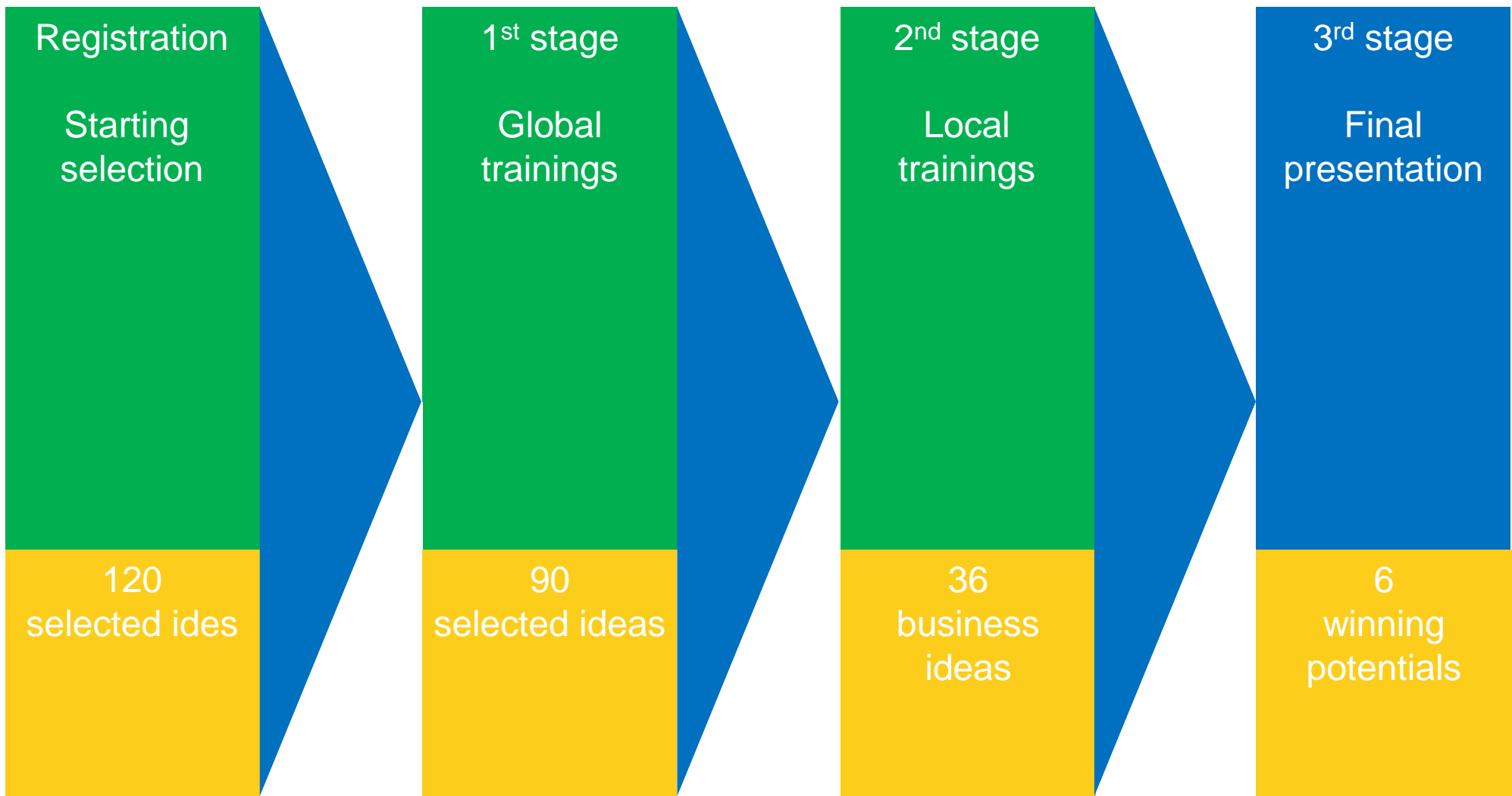
Assistance in starting
the car

Assistance in starting
the business idea



ArcLub One

Jumpstarter – steps



ArcLub One

Jumpstarter – areas of progress

Business potential of idea

Communication

Market segmentation

Presentation

Financial plan

Marketing

Business model

...



Solution is machining with

ArcLub ONE







Funded by the
European Union



BoostUP

2021 RIS

MANUFACTURING DAYS

powered by EIT Manufacturing

part of
ViennaUP'21



Create Category

1st place winner

ArcLub ONE



ArcLub One

What is next?



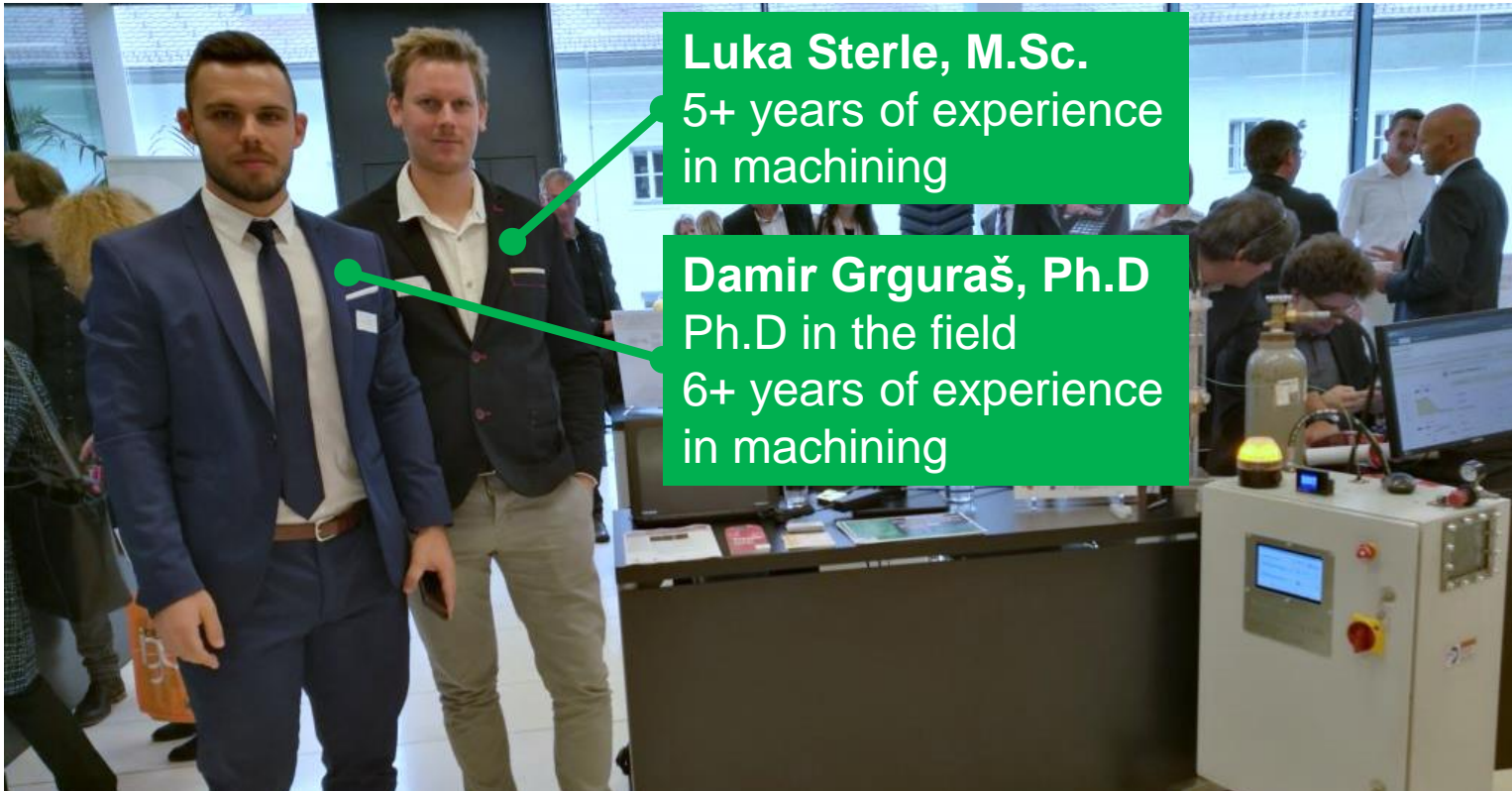
ArcLub One is the innovation for sustainable and clean CNC machining. In addition, the tool life can be prolonged by more than 200 % and the production costs can be reduced up to 50 %. These benefits arise at low energy and CO2 consumption.

Team!

Work!

Future!

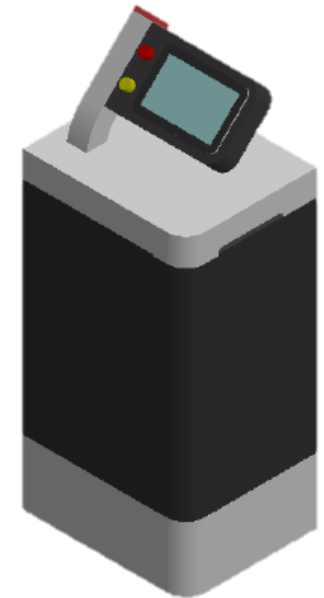




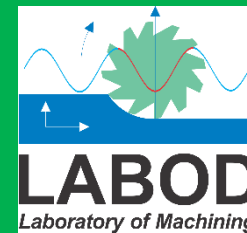
Luka Sterle, M.Sc.
5+ years of experience
in machining

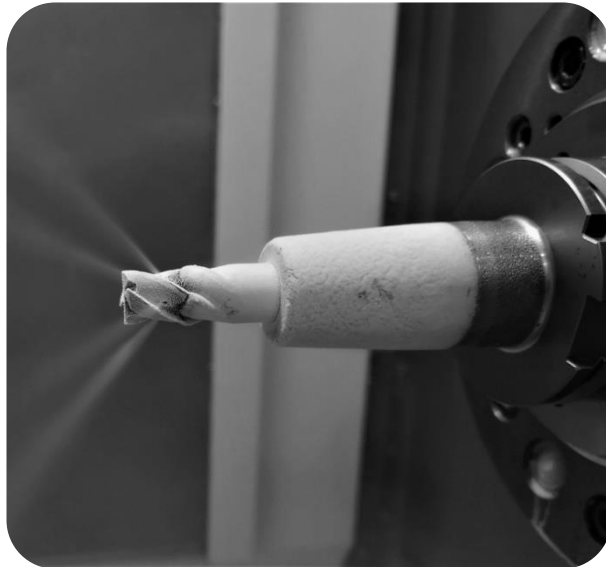
Damir Grguraš, Ph.D
Ph.D in the field
6+ years of experience
in machining

Solution is machining with **ArcLub ONE**



With the support of global leading cryogenic machining center – Laboratory for machining LABOD





ArcLub ONE

Novel cryogenic machining technology / system based on lubricated carbon dioxide

EIT Jumpstarter Grand Final

Scope

Manufacturing –
CNC machining processes

Current state

Industry-ready with
patent pending, EU-LU101232
Luxembourg, 2019

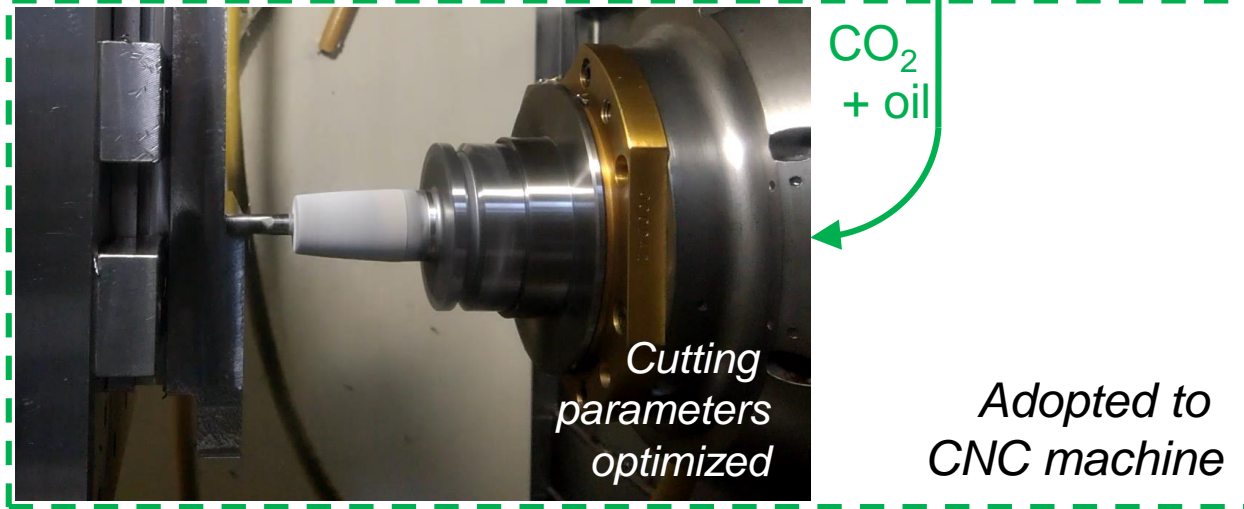
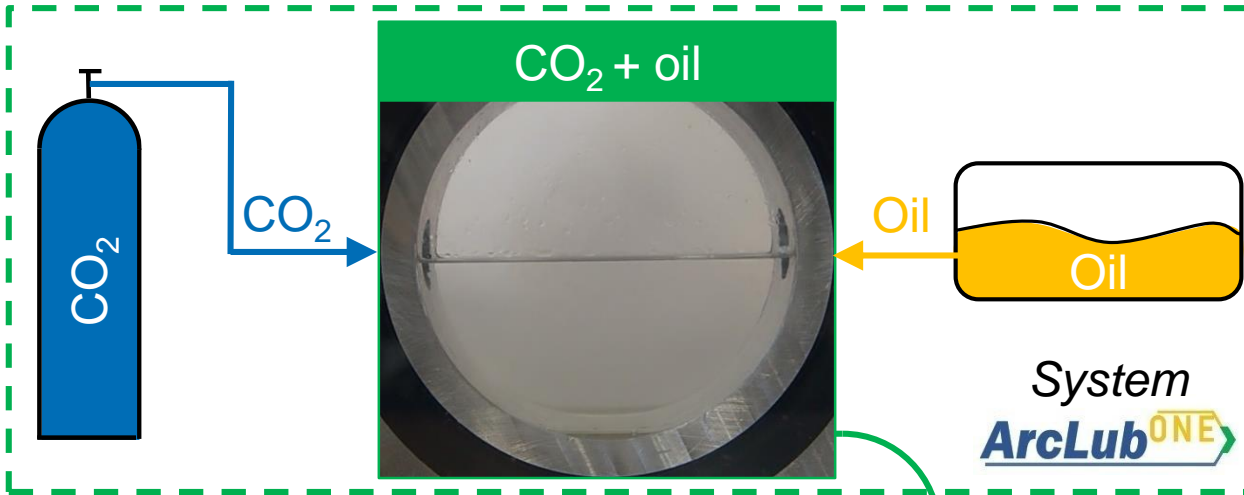
Damir Grguraš, Ph.D.

Luka Sterle, M.Sc.

25th of November 2020

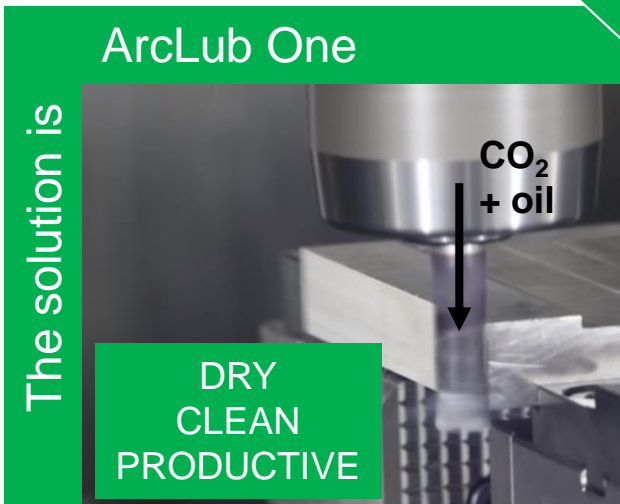
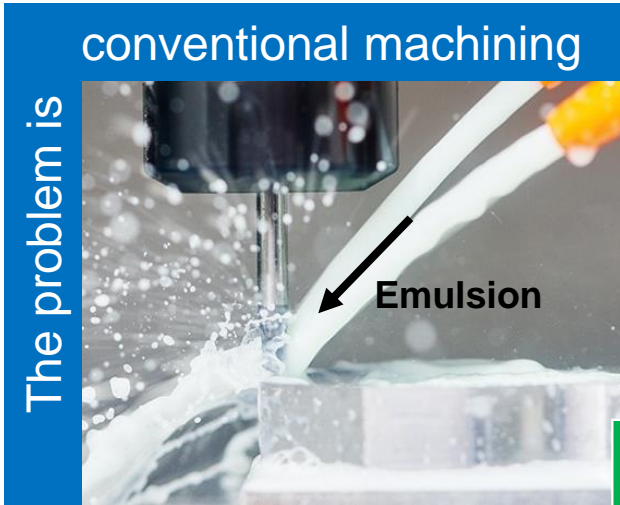
ArcLub One

System & Current stage of development



- ✓ TESTED IN THE INDUSTRY
- ✓ EU PATENT PENDING
- ✓ INDUSTRY-READY SYSTEM AVAILABLE





- ✓ EASY TO USE | No emulsion monitoring needed
- ✓ CLEAN PARTS | *No cleaning needed*
- ✓ LOW ENERGY AND CO₂ CONSUMPTION
- ✓ INCREASED PRODUCTIVITY | *More than 100 %*
- ✓ REDUCED PRODUCTION COSTS | *Up to 50 %*
- ✓ SUSTAINABLE MACHINING TECHNOLOGY



Manufacturing

CNC machining

CNC machining of difficult-to-cut materials

Total sales of emulsion for EU: 5.2 mio t/year

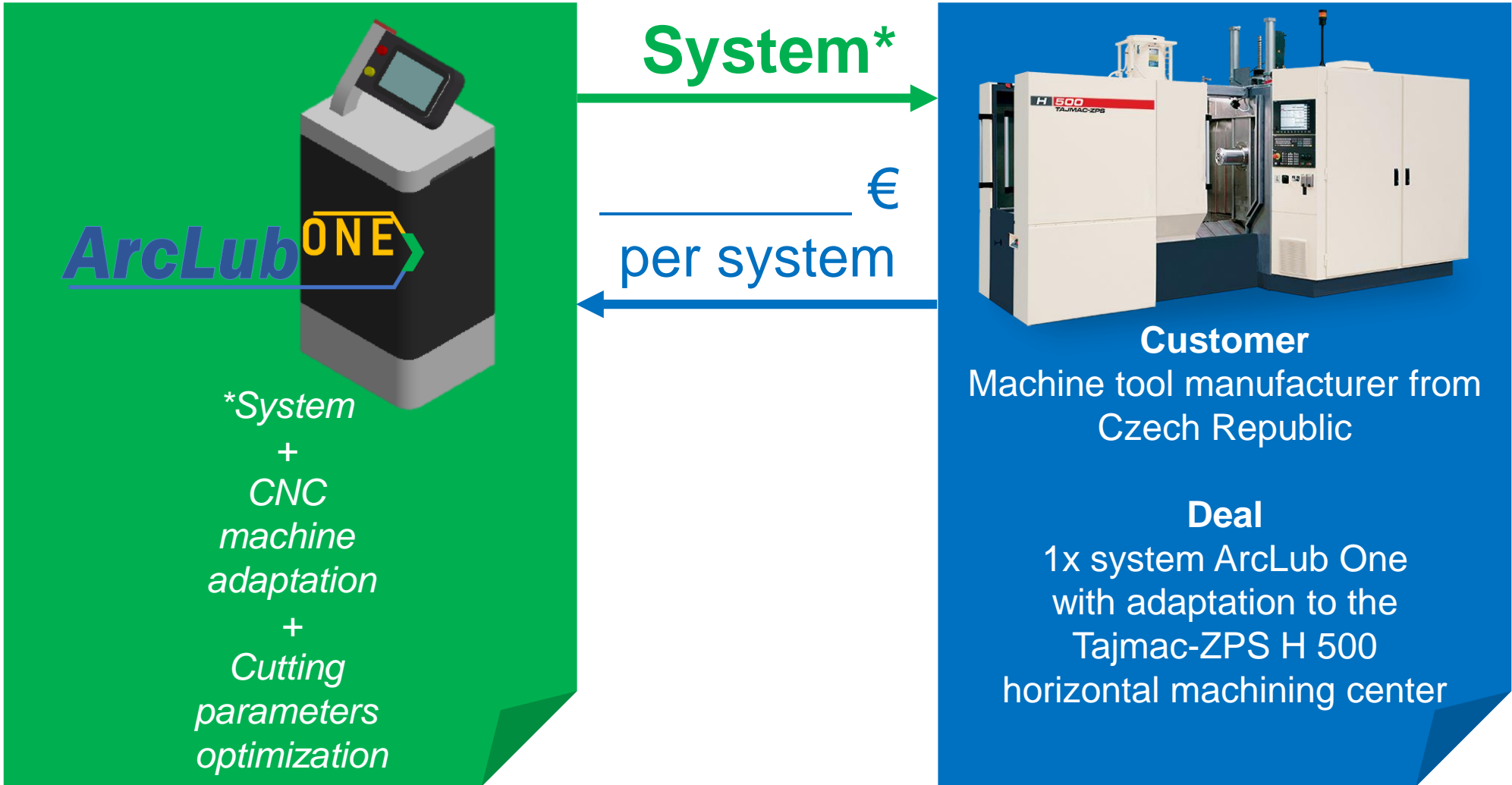
Sweden
Norway
France
Czech R.
Slovenia

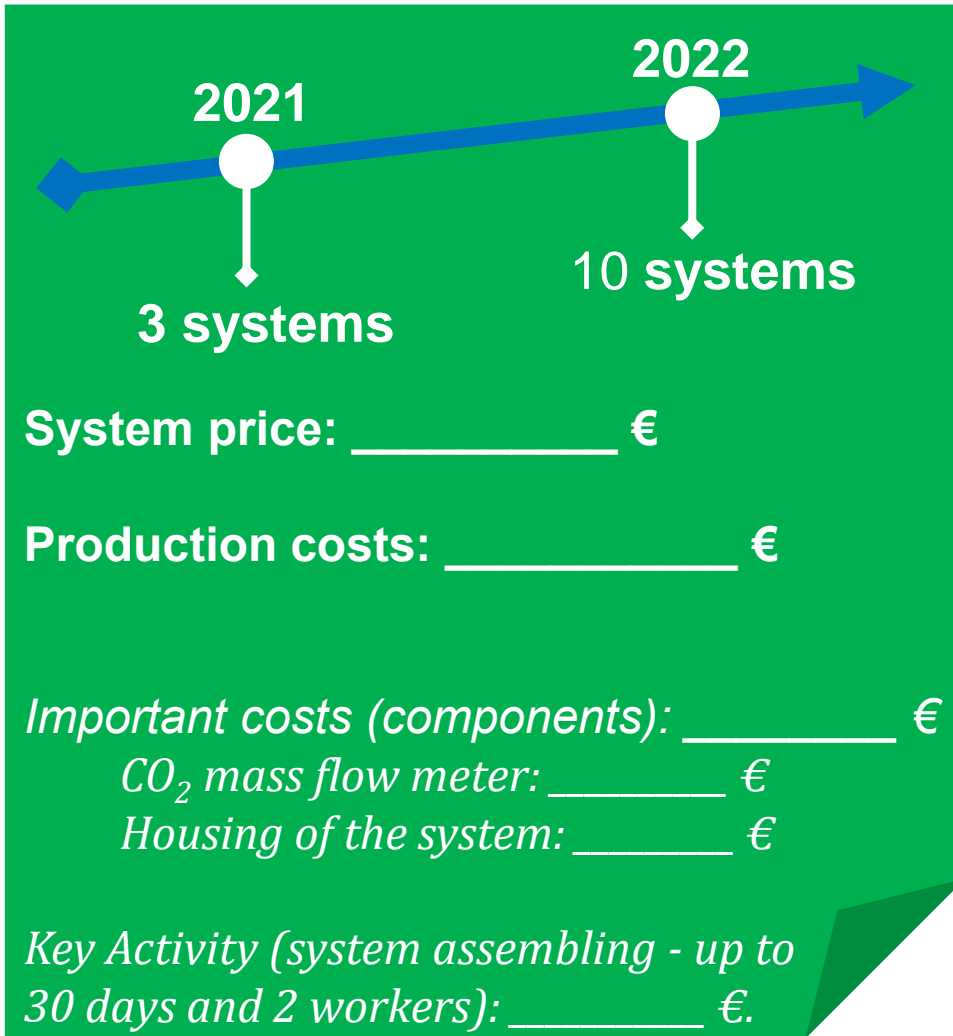
Clean technology – clean industry



ArcLub One

Deal & First sale





2021

2022

3 systems

10 systems

System price: _____ €

Production costs: _____ €

Important costs (components): _____ €

CO₂ mass flow meter: _____ €

Housing of the system: _____ €

Key Activity (system assembling - up to 30 days and 2 workers): _____ €.



STARTING A BUSSINES

IN BEGINNING OF 2021

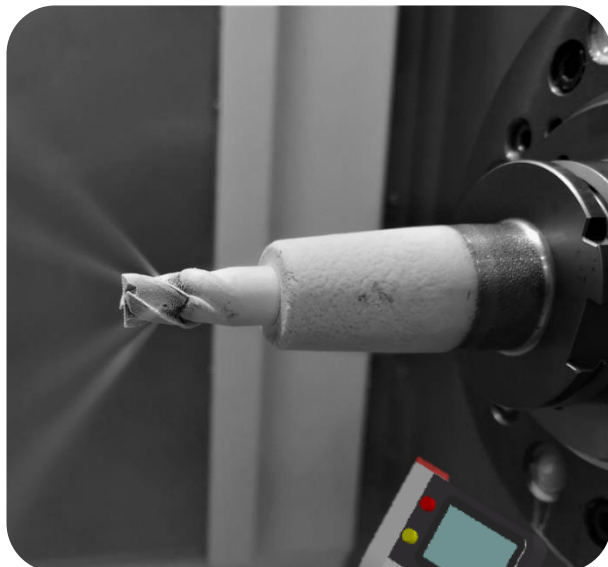
SUPPORT OF EIT INNOVATION PROJECT
 Transitioning to a waste free production -
 international cryogenic + MQL machining
 activity, approved, starting 01.01.2021

OPTIONS IN DISCUSSION

- Novel company – startup
- Take over _____
 _____, Sweden
- Joint venture with
 _____, Slovenia

IP TRANSFER TO THE COMPANY





THANK YOU

EIT Manufacturing

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