



# Manufacturing sector map at transnational level

A multilevel description of FoF competences and technologies along manufacturing value chain and main innovation actors in AS region.

BIFOCAlps' main objective is to increase collaboration and synergies among the main actors of the Alpine Space region for a sustainable, smart and competitive development of the manufacturing value chain towards the FoF.

## Methodology steps Definition of Survey of FoF practices along Manufacturing Fof manufacturing manufacturing sector maps supply chain framework Definition of FoF manufacturing framework Analysis of local initiatives for the implementation of the FoF in the AS (S)Industry 4.0 Slovenia and Industrie<sup>4.0</sup> S4 Strategy Production of the Future Research and Technology Innovative Manufacturing fabbrica intelligente LES PÔLES DE COMPÉTITIVITÉ **Analysis of Smart Specialization Strategies** Bavaria Baden Württemberg Regions Specialization areas satellites for scientific missions. automatization earth observation systems (...) robotisation of production(...) **Priority** apps, embedded systems, themes electro mobility Micro-mechatronics. software platforms (...) Adaptronics (...) autonomous driving(...) automotive electronic, engine Addictive manufacturing. Enabling electronic and software (...) Augmented reality (...) technologies

advanced communication

and navigation systems(...)

control systems, Smart Diagnostic

systems, Innovative materials (...)

# Survey on FoF practices Aims

- Investigate the current state of awareness and adoption of Factory of the Future (FoF) solutions in the manufacturing companies of the Alpine Space region
- Highlight main strategic, organisational, managerial and technological issues linked to FoF in the manufacturing environment
- Build national manufacturing sector maps (Austria, France, Germany, Italy, Slovenia) and transnational manufacturing map

#### Structure



## Examples

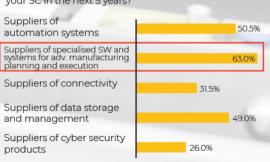
#### STRATEGY

Which statement is valid for your company's strategy towards FoF?



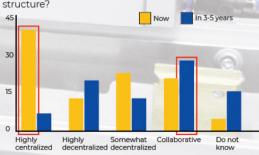
#### **MANAGEMENT**

Which new players are you planning to introduce in your SC in the next 5 years?



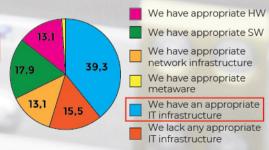
#### ORGANIZATION

How would you classify your company's organisational structure?



#### **TECHNOLOGY**

Do you think your company's actual IT infrastructure is appropriate for the switch to Factory of the Future?



## Manufacturing sector maps in AS

- Manufacturing sector maps at national level

1 map per country with data from FoF Framework analysis, survey results and other main sources



Survey results

Most important skills: Problem solving

Ability to collaborate Computer based

Lombardia

Survey results

Company organisation:

Now: highly centralised In 3-5 years: collaborative

**Piemonte** 

Smart speci

#### MECHANICAL ENGINEERING

- 306,000 employees, 55,000 engir billion Euro sales
- 70 universities and almost 100 resinstitutes, Allianz Industrie 4.0 initi
- Main challenge: globalise enterpri

## **National level initiatives:**

## National Industry 4.0 Plan

- Public investment of about 20 billion euros
- Super and hyper amortisation of 140% and 250%
   50% tax credit on R&D investments

incentives on investments in start-ups and innovative small businesses



### Research & Innovation Roadmap

- Systems for personalised production
- Strategies, methods and tools for industrial sustainability
- Factories for humans
- High-efficiency production systems
- Innovative production processes
- Evolutive and adaptive production systems
- Strategies and management for **next-generation production systems**



#### Smart specialisation

#### **AUTOMOTIVE INDUSTRY**

- 219,000 employees, 113 billion Euro turnover
- global players: Daimler, Porsche and Bosch
- 8 billion Euro annual investment in R&D
- excellent research institutes (Fraunhofer Inst.)
- Cluster Automotive
- Main challenge: electromobility and lightweight design

#### Smart specialisation

#### MEDICAL TECHNOLOGY

- 46,000 employees, 11.7 billion Euro turnover
- global players: Roche, Boehringer Ingelheim and Aesculap
- Cluster Medizintechnik
- great innovative power, excellent research institutes (Fraunhofer Inst.)

#### Survey results

#### Supply chain in 5 yrs:

59% Suppliers of specialized SW and system for Advanced Manufacturing 43% Suppliers of automation systems



**BIFOCAlps** 

Online Survey: 90 companies from AS

## Friuli VG

Survey results

## Veneto

alisation

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earch

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Company FoF strategy:

29,7% have not a strategy yet 24,3% have a clear roadmap 24,3% have clear business goals with KPI

Regional details

#### Smart specialisation

#### AEROSPACE

- 15,000 employees, 4.5 billion Euro turnover
- global players: EADS
- Aerospace Forum Baden-Württemberg,
- excellent research institutes (Fraunhofer inst.)
- Main challenge: improve visibility of small-size German enterprises

## GERMANY Baden Württemberg

Tübingen

#### Smart specialisation

## Freiburg

- **ELECTRICAL ENGINEERING & ELECTRICAL INDUSTRY**
- 160,00 employees, 36 billion Euro sales
- 33 institutes/specialist areas and centers at the universities as well as six specialist universities
- Robert Bosch Center for Power Electronics VDE Association for Electrical, Electronic & Information Technologies
- Main challenge: **electro mobility** (to find new ways to make a sustainable energy future possible)

## Manufacturing sector maps in AS

- Policies and Smart Specializations

A comparison of national policies and Samart Specializations area matching research priorities and enabling technologies





|          | Initiative                                | Focus   | Objectives   | Tarpet<br>augunce   | funding<br>necesions<br>te financing   | Budget  | Results   |
|----------|---|---|--|---|--|---|---|
| Pamer    | Alliance<br>pour<br>Industrie<br>de Futer | SAID diagnostics and modernitration incentives; Development of the trational offering: Streenase glist projection. Development of ack aroset Manufacturing techniques.  | To nodernise the French production base hand production base and susport the see and finings and integration of digital technologies to teamborn companies and business models to onesia new sources of create and provents and lobe or the firm of th   | French industry and production to see and in controller SMEs and mid-agra | Mixing public Funding<br>Funding<br>instruments<br>as loans and<br>to incentive<br>with private<br>investments in<br>55D and<br>production<br>investments in<br>fiscal a private<br>investigation<br>finance a private<br>investigation<br>finance in private<br>investigation<br>finance<br>investigation<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance<br>finance | Approx. 10<br>billion of<br>public<br>funding and<br>industry<br>contributions                  | > 900 loans to companie; 2400 company assessment a for moderning productor. > one experts identified: involvement of 18 negions   |
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Mapping of Smart Specialization Areas

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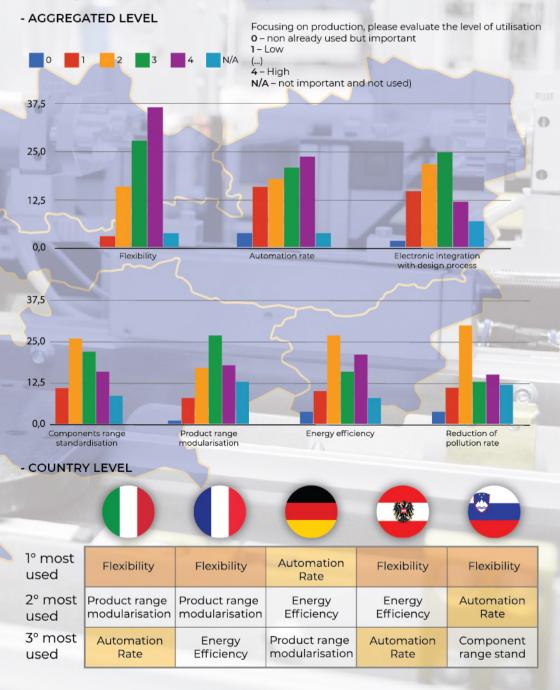
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### - A transnational perspective: practices

An example of operations

An overview of FoF practices along the manufacturing supply chain in the AS according to the four main domains analysed in the survey.









## **PROJECT'S INFO**

START DATE: 1st November 2016 END DATE: 31th October 2018

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## **UPDATES**

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