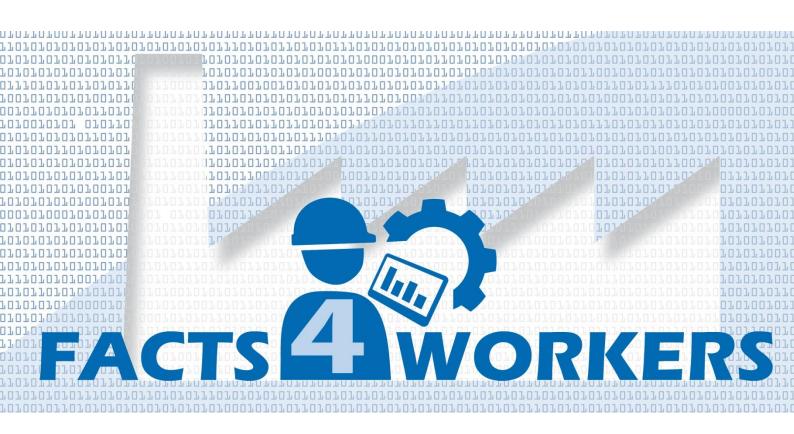
Alexander Stocker

Project Deliverable 7.3

Activities reports

Worker-Centric Workplaces in Smart Factories

www.facts4workers.eu





Series: Heading

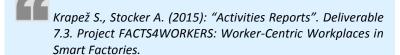
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About this document



Executive Summary

This document represents Deliverable 7.3 (Activities Reports) of the H2020 project FACTS4WORKERS - "Worker - Centric Workplaces in Smart Factories". This document covers all dissemination activities conducted in the first year of the FACTSWORKERS project. It (1) includes the dissemination vision and strategy, (2) lists all dissemination and communication actions and (3) provides a summary on planned and achieved KPIs.

For internal communication and collaboration FACTS4WORKERS adopted the tool "Projectplace", which is a novel Web 2.0-based project management solution, including powerful social-media enabled communication features and an easy to use - yet very effective - project document sharing and management functionality. By facilitating open and transparent communication through Projectplace FACTS4WORKERS almost managed to get rid of all emails in internal communication.

External communication and dissemination activities included defining an appealing corporate identity of the project (dedicated project logo, branding, document templates), establishing a nice-looking yet professional project website with a fancy CSS, and fulfilling our defined social media strategy to maximize our online audience (by intensively using Weblogs, Facebook, Twitter, and LinkedIn).

While our website provides relevant facts of the project which are of a rather static nature, our blog is composed by highly dynamic and up-to-date-content on what is going on in the FACTS4WORKERS project and beyond. We use Social media as signals. Whenever we share content trough social media, we can successfully attract further stakeholders to our website and keep them up to date on what we have already archived. We use Social Media and Website analytics to document that thanks to our excellent communication and dissemination strategy - FACTS4WORKERS' online communication targets have been more than met. We have conducted extensive networking with our scientific and industrial communities. Already in the first project year, we were able to conduct a plethora of scientific dissemination activities, including papers accepted by two reviewed journal

papers, and presentations at six reviewed conferences. Four papers providing mainly industry-related information about FACTS4WORKERS including the projects' vision, approach and industrial challenges have been published in journals for practitioners. Additionally information on FACTS4WORKERS was published in 26 other channels, including also a press release and an interview which was broadcasted in Austria by ORF, the Austrian national service broadcaster attracting a huge audience. Last but not least we have conducted solid networking activities with two major human-centred manufacturing projects, SO-PC-PRO and SATISFACTORY, to intensify the discussion.

Keywords

#FACTS4WORKERS, #Dissemination, #Deliverable, #Communication

Document authors and reviewers

This page presents authors, contributors and reviewers of deliverable 7.3-Activities reports. Sincerely thanks to all contributors and reviewers.

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SIA	SiEVA d.o.o.
VIF	Virtual Vehicle Research center
HIR	Hidria Rotomatika
LUT	Lappeeenrata Univeristy of Technology
IMI	iMinds

IT	Information
	technology
ITA	Instituto Tecnológico
	de Aragón
UZH	University of Zurich
EVO	.Evolaris next level
TKSE	ThyssenKrupp Steel Europe

1 Introduction

1 Introduction

The high ambition of the FACTS4WORKERS project is to create Factories of the Future with a pervasive, networked information and communication technology that collects processes and presents large amounts of data. These smart factories will autonomously keep track of inventory, machine parameters, product quality and workforce activities. But at the same time, the worker will play the central role within the future form of production.

The project goal is to create »FACTories for WORKERS« (FACTS4WORKERS), to strengthen human workforce on all levels from shop floor to management since it is the most skilled, flexible, sophisticated and productive asset of any production system and in this way ensure the long-term competitiveness of manufacturing industry. Therefore a serious effort will be put into integrating already available IT enablers into a seamless and flexible Smart Factory infrastructure based on work-centric and data-driven technology building blocks.

These solutions will be developed according to the following four industrial challenges which will all enable improvements in manufacturing in general:

- Personalized augmented operator,
- Morker-centric rich media knowledge sharing management,
- Self learning manufacturing workplaces,
- In situ mobile learning in the production.

FACTS4WORKER's objectives in terms of measurable indicators are:

- To increase problem solving and innovation skills of workers,
- To increase cognitive job satisfaction of workers participating in the pilots,
- 1 To increase average worker productivity by 10% for workers participating in pilots,
- To achieve TRL 5 7 on a number of worker-centric solutions through which workers become the smart element in smart factories.

1 Introduction

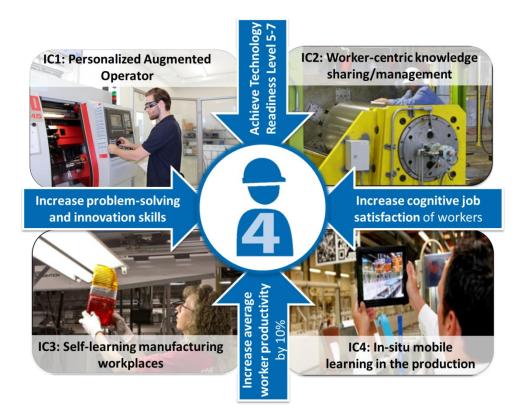


Figure 1: Project main objectives

Deliverable 7.3. Activities reports, presents all dissemination activities carried out in the first year of FACTWORKERS project. This deliverable is structured as follows:

- **Section 2** describes the dissemination vision as well as the attitude of the project towards internal and external dissemination and communication.
- **Section 3** describes all dissemination activities carried out in the first year of the FACTS4WORKERS project in detail.
- **Section 4** gives a brief summary of all planned versus all conducted dissemination activities.

1.1 Project key facts and numbers

The project consortium is composed of fifteen partners from eight different European countries:

- 1. Kompetenzzentrum Das Virtuelle Fahrzeug, Forschungsgesellschaft GmbH (AT)
- 2. Hidria TC Tehnološki center d.o.o. (SI)
- 3. Universita degli Studi di Firenze, Department of Industrial Engineering (IT)
- 4. TU Vienna, Institute for Engineering Design and Logistics Engineering (AT)
- 5. ThyssenKrupp Steel Europe AG (DE)
- 6. Hidria Rotomatika d.o.o., industrija rotacijskih sistemov (SI)
- 7. iMinds VZW (BE)
- 8. SiEVA d.o.o. (SI)
- 9. University of Zurich, Department of Informatics (CH)
- 10. Thermolympic S.L. (ES)
- 11. EMO Orodjarna d.o.o. (SI)
- 12. Evolaris next level GmbH (AT)
- 13. ITAINNOVA/ Instituto Technologico de Aragon (ES)
- 14. Schaeffler Technologies AG & Co. KG (DE)
- 15. Lappeenranta University of Technology (FI)

Start date of the project: 01 December 2014 **Finish date of the project:** 30 November 2018

Total person month: 1081

Website: http://facts4workers.eu

2 Dissemination

2 Dissemination

The scope of this chapter is to present dissemination as the key tool to raise awareness about the project and project results. The dissemination strategy of FACTS4WORKERS foresees *internal and external* actions.

- Internal communication and dissemination allows members of the FACTS4WORKERS project consortium to be involved in every project activity and share their knowledge and experience, which is essential for successful project execution.
- External dissemination and communication has utmost importance for the project, because in this way we present the project to the wide target audiences and raise project awareness amongst our most important stakeholders.

2.1 Internal communication

In the first year of the project, internal communication was mainly conducted *via telephone-conferences, Webex meetings, e-mail and periodic physical meetings* of core teams.

At the start of the project we mainly shared project documents **on an extranet** ("VIRTUAL VEHICLE Secure Data Exchange") which is a document-centric collaboration platform. However, on July 2015 we adopted a modern tool for project communication, **Project-place**¹. Projectplace is a symbiosis of a modern project management tool including powerful social networking functions, project-based-document management.

- A Projectplace enables secure sharing of project documents with all partners, ensuring permanent access to project documentation from desktop PCs and mobile devices.
- In addition to sharing documents Projectplace also serves as a social-media based communication tool for all project partners, enables project plan monitoring, project boards (a type of Kanban boards) and has the option of meeting arrangements.
- A Projectplace has greatly improved project collaboration and getting things done, while causing fewer project delays, ensuring better control of costs and less time wasted.

-

¹ www.projectplace.com

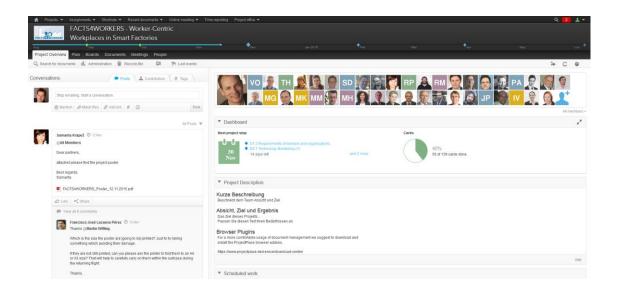


Figure 2: "FACTS4WORKERS-Intranet" - social collaboration

In Projectplace the FACTS4WORKERS documents structure is divided into 10 major sections, Work packages, Meetings, Timing, Milestones, Deliverables, Risk analysis, Organizational, and Proposal until submission. This enables all project partners to easily share project documents within the consortium.

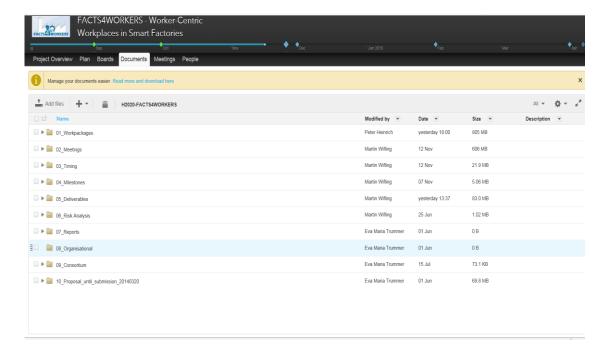


Figure 3: "FACTS4WORKERS-Intranet" - Document sharing and management

The whole communication in Projectplace is transparent to any project employee, following the principles of Enterprise 2.0. It allows everybody to rate and comment every message, document and action, facilitating a very interactive discussion on the ongoing project work. However, Projectplace does not only support communication, it also facilitates pro-

2 Dissemination

ject collaboration and project coordination. Projectplace has been successfully adopted by all project partners and is intensively used for all project-relevant communication and for document exchange. We have successfully managed to aggregate most of the internal project communication into one single tool, reducing the information and communication-channel overload. Currently 64 users from the FACTS4WORKERS consortium are registered on Projectplace.

2.2 External communication

In the first year of the project we aimed at making our project as visible as possible, having the following key goals in mind:

- Create a sustainable corporate identity of the project,
- Design and publish dissemination material,
- Establish and regularly update the project website with relevant content,
- Adopt social networking tools to facilitate project awareness,
- 1 Publish blog posts, magazine articles, conference papers, press releases, and
- A Present the project in various events in face2face talks and virtual sessions.

We create a sustainable corporate identity to make the project more recognizable to a wide range of audience.

We designed and publish dissemination materials via our project website and via social media to share vision, mission, and goals of our project to all interested stakeholders.

We regularly update our project website with relevant up-to-date content to make website visitors aware of what is happening within the project and beyond.

We recognize social media networking tools as one of the most popular and fastest ways of sharing project information and enhance project visibility and adopt it in our daily work.

We publish blog posts, magazine articles, conference papers, and press releases as key dissemination tools for informing all relevant stakeholders about our project.

We present the project in various events in face2face talks and virtual sessions to promote its goals to industrial stakeholders and to establish contacts for future exploitation.

FACTS4WORKERS's dissemination activities will ensure wide reaching impact and use of project deliverables among two main categories of the targeted audience:

- **Primary communication targets**: these are stakeholders of high interest.
- **Secondary communication targets**: these are stakeholders of less interest but still very important for the project.

We have prioritised the **primary communication targets**, which are organisations and individuals with whom we want to have an intensive dialogue on the content of our research and demonstration activities:

- Research initiatives covering synergistic subject matter,
- System developers, who constitute the route-to-market for the technology aspects of our work,
- Business consultants who can work with early end-users on training and organisational development,
- Organisations that set standards in our subject matter fields,
- Research communities in areas of direct, specific relevance to the project,
- National and regional funding bodies,
- **§** Factory workers.

Secondary communication targets with whom we plan to have a less intensive dialogue about outcomes and user experiences include:

- Sector or geographical organisations of industrial end users, e.g. EARTO, EARPA, CLEPA, ERTRAC (automotive sector), ESTA (steel industry), VDI (German industry), EEF (UK), etc.,
- Vendors, integrators and sector organisations of industrial automation products (other than standardization bodies they are primary targets),
- Wider research community in areas related to our project activities,
- Manufacturing workers unions, e.g. Unite (UK), FNV (NL), Pro-GE (AT),
- Bodies involved in vocational training and worker development (EVTA, EFVET),
- Policy makers at European or national level.

Our **communication priorities** will shift during the course of the project:

In the first two years of the project, we are mainly interested in collecting information and knowledge on worker and management needs and communicating them to our stakeholders in terms of industrial challenges, user requirements, and use cases.

2 Dissemination

In the third and fourth year we are mainly concerned with building momentum for system development and commercial installation initiatives. Communication efforts during the second half of the project execution will focus on potential commercial development partners, including system developers, system integrators, private funders and workers.

Outreach communication is very important for successful research projects. It is essential to inform the **wider public** on project activities to support the manufacturing industry, especially on activities aiming to facilitate better workplaces. We are also interesting in reaching pupils who want to take the shop floor careers in the future.

3 Conducted dissemination activities

3.1 Corporate identity of the project

3.1.1 Project Logo

The project logo is one of the most important elements of a project's identity. Its main purpose is to directly represent the core message of the project. Our logo captures the vision, mission and objectives of the FACTS4WORKERS project, and therefore the project logo has already been designed in the first month of the project. The logo tells anybody that the worker is in the centre of the factory.



Figure 4: Project logo

3.1.2 Project Templates

After the project logo has been designed, templates for different document types (doc., exc., ppt) enabled the project to be represented in an uniform way. All templates are available for the consortium partners on the Project Place.

In order to increase the readability and consequently the impact and reach of the deliverables for non-project team members, we have put special emphasis on the design of the publicly available deliverables. As a matter of course, also the link to the new media has been taken into account as much as possible, e.g. via QR-codes, authors CV's etc., linking to further information on the facts4workers website or blog.



Figure 5: Project template

3.2 Project website

A project website is one of the most effective sources of dissemination, and it is the second principle of any successful dissemination strategy. It enables and facilitates communication with all relevant project stakeholders - the general public, industry, and research. It should attract both, managerial decision makers and operational experts. The website domain had already been reserved before the start of the project. The project website http://facts4workers.eu has therefore been established quickly after the kick-off-meeting and the website is since then regularly updated it with new content and photos.

3.2 Project website

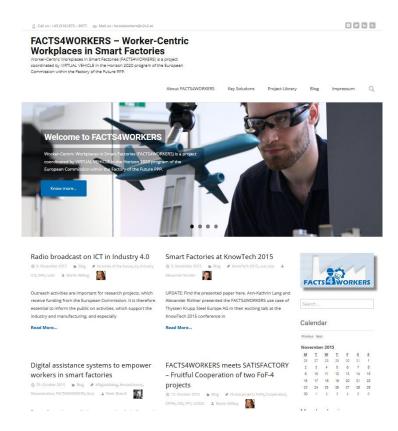


Figure 6: Project website www.facts4workers.eu

3.2.1 Online content

The FACTS4WORKERS website structure is divided into five sections, and some of them are again divided into subsections:

About the project (Impact | Key Facts | Goals | News | Partners),

This section is dedicated to present the project's impact, key facts, project goals, news and consortium partners.

Key solutions,

This section presents how we aim to develop a modular smart factory infrastructure though linking a number of technical building blocks. However, as the feasibility of our concept needs to be verified during the demonstrator phase, we will update this section with more detailed information.

Project library (Publications | Photo Gallery | Template |Deliverables | Dissemination material),

The project library provides visitors with various project materials for reading and downloading.

Blog and

The Blog provides updates about the project status and other interesting events on a regular base.

Impressum.

The majority of website content is managed by the project coordinator (Virtual Vehicle Research Center) and the WP Leader for dissemination (SiEVA). However, any project partner can actively contribute content through editing own blog articles.

Our **online content** is built on three pillars:

Static content (Website)	Dynamic content (Blog)	Signals (Social Media)
Introduces the project to the public, providing the most relevant facts. Example:	Raises the awareness of interested stakeholders on a regular basis with interesting content. Exemplary blog posts:	Content is actively shared via social media, including links to the website and the blog. Exemplary a Twitter post:
Project website provides all information about, project goals, key facts and key solutions.	 FACTS4WORKERS at Know- Tech 2015 Conference² FACTS4WORKERS meets SO- PC-PRO in Graz³ 	FACTS4WORKERS @FACTS4WORKERS - 29. OM. Digital assistance systems as empowerment for workers in the #SmartFactory Link: facts4workers.eu/digital-assist #industry40 @evolaris

² http://facts4workers.eu/facts4workers-at-knowtech-2015-conference/

³ http://facts4workers.eu/facts4workers-meets-so-pc-pro-in-graz/

3.2 Project website



Digital assistance systems to empower workers in smart factories

Figure 7: Example: Blog article edited by Evolaris

To increase the relevance of the Facts4Workers website in Google search results, we publish interesting blog posts on a regular base, which is a recommendable practice suggested by content marketing and content strategy experts.

3.2.2 Website analytics

Modern website analytics provides an excellent means to monitor, if and how website content can achieve the desired success. In order to better monitor website visits we decided to use Google Analytics⁴. Google Analytics provides a detailed overview of a series of KPIs relevant for online marketing and content strategists, including

Page sessions,

A session is a group of interactions that take place on a website within a given time frame. A single session can contain multiple screen or page views, events, social interactions, etc.⁵

Average session length,

⁴ Google Analytics: http://www.google.com/analytics

⁵ Summarize by Google Analytics: http://www.google.com/analytics

Presents the average length of a session, by default, a session lasts until there's 30 minutes of inactivity⁶.

Pageviews,

Pageviews are the total number of pages viewed; repeated views of a single page are counted⁷.

& Users,

This includes users with at least one active session within the selected date range (includes both new and returning users⁸).

% of new sessions,

The percentage of new users is an estimate of the percentage of first time visits9.

Mebsite visitors by country / language / city.

Presents the percent of visitors by different categories.

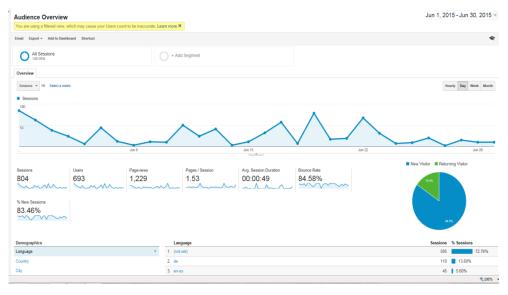


Figure 8: Monitoring online traffic from 01.06. - 30.06.2015

By monitoring online traffic, we can better adjust both website structure and website content to the information needs and wants of our website visitors.

⁶ Summarize by Google Analytics: http://www.google.com/analytics

⁷ Summarize by Google Analytics: http://www.google.com/analytics

⁸ Summarize by Google Analytics: http://www.google.com/analytics

⁹ Summarize by Google Analytics: http://www.google.com/analytics

3.2 Project website

3.2.3 Website statistics

Google analytics was implemented in mid of April 2015 and from that month onwards we monitor website visitors. The table below includes a statistics on page sessions, page views, session length and a comparison of factual users to our planned communication targets.

Month	Page Sesions	Users	Pageviews	Average length of a Session	Result: Users/ project target > 300 visitors
April	384	284	783	0:01:47	94%
May	857	752	1.855	0:02:04	250%
June	804	693	1.229	0:00:49	230%
July	974	859	1.670	0:01:39	285%
August	462	344	1.680	0:02:22	114%
September	545	293	2.715	0:03:05	97%
October	547	341	2.720	0:02:53	113%

Figure 9: Website statistic

In accordance to our communication targets, we should achieve more than 300 website visitors per month. The statistics document that the Facts4workers communication targets have been more than met with regard to online marketing.

The graph below also indicates that our communication targets have been more than met.

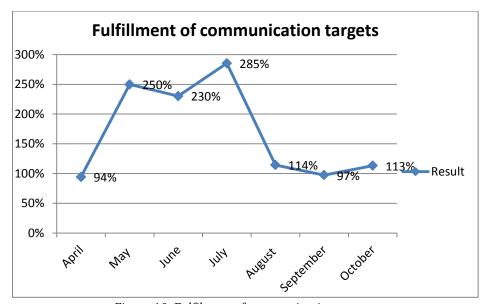
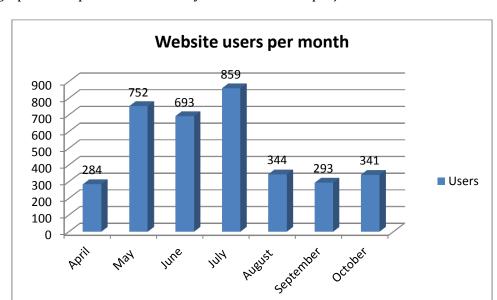
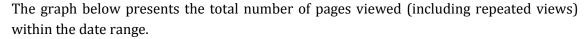


Figure 10: Fulfilment of communication targets



The graph below presents how many users visited our project website.

Figure 11: Website users per month



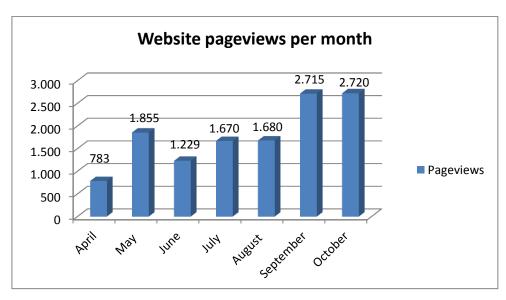


Figure 12: Website pageviews per month

3.2.4 Project Library

The website's project library includes photographs, dissemination material, publications, deliverables and templates. Allowing others to use our virtual assets increases our project

3.3 Social media

reputation. Assets are available for download. The screenshot below shows our photo gallery, which is an example of our assets, which can be used by others, too.

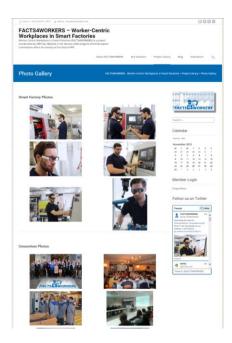


Figure 13: Photo gallery on the project website

3.3 Social media

The project is very active in the most relevant social media platforms in order to promote the findings of the project and to foster the creation of a bi-directional collaborative community of interested stakeholders. Social media is a very dynamic environment and one of the most popular and fastest ways to talk about our project and to enhance its visibility. We therefore opted to use the following social media platforms:

Twitter

Twitter is an online service that enables users to send and read short 140-character messages called "tweets". 10

Twitter analyctic		
Tweets	160	
Followers	70	
Likes	20	
Followings	101	

Figure 14: Twitter analytic

¹⁰ https://en.wikipedia.org/wiki/Twitter

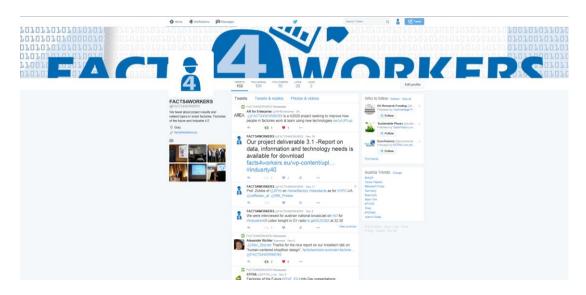


Figure 15: FACTS4WORKERS on the Twitter

Blog (Tumblr, website blog),

We operate two blogs, a Tumblr and a WordPress Blog (wordpress is the content management system of our project website). Tumblr is a microblogging platform and social networking website. The service allows users to post multimedia and other content to a short-form blog.¹¹

Website blog post	analytic
Posts	24

Figure 16: Website blog post analytics

Tumblr blog post analytic				
Posts	19			

Figure 17: Tumblr blog post analytic

Facebook

Facebook is an online social networking service. After registering to use the site, users can create a user profile, add other users as "friends", exchange messages, post status updates and photos, share videos and receive notifications when others update their profiles. Additionally, users may join common-interest user groups, organized by workplace, school or college, or other characteristics.¹²

The data were obtained on the 20.11.2015.

¹¹ https://en.wikipedia.org/wiki/Tumblr

¹² https://en.wikipedia.org/wiki/Facebook

3.3 Social media

Facebook analytic			
Posts	36		
Number of likes	27		

Figure 18: Facebook analytic

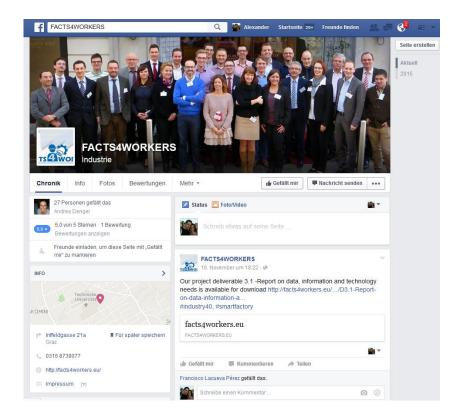


Figure 19: FACTS4WORKERS on Facebook

LinkedIn.

LinkedIn is a business-oriented social networking service. It is mainly used for professional networking¹³.



Figure 20: LinkedIn analytic

Playing an active role in social media is a far more effective way of engaging in conversation than merely posting something on the project website. The good thing about taking part in the social web is that it does not require us to share only full formed ideas or complete pieces of research. We can share work in progress and immediately get feedback that will improve our results.

¹³ https://en.wikipedia.org/wiki/LinkedIn

3.4 Dissemination material

In order to inform a wide range of audience and enhance project visibility, different kinds of dissemination materials have been prepared. In the first year of the project we have already prepared:

- Project brochure,
- Project roll-up, and
- Project press release.

All dissemination materials contain FACTS4WORKERS logo, brief description of the project and list of the partners. All dissemination material is published on the project website and is made available for download. It has been and will be distributed at all events attended by the project partners in order to increase the visibility of the project and to extend our network and contacts.

3.4.1 Project brochure

The project brochure presents the basic information about the project, including project vison, objectives and key solution. We have so far printed 1000 project brochures.

3.4 Dissemination material



Figure 21: Project brochure

The brochure has been distributed to the consortium partners as well as via social media channels and used for project presentation in external events.

3.4.2 Roll-up

In order to aid the project partners in presenting the project at different events a project roll-up has been designed.

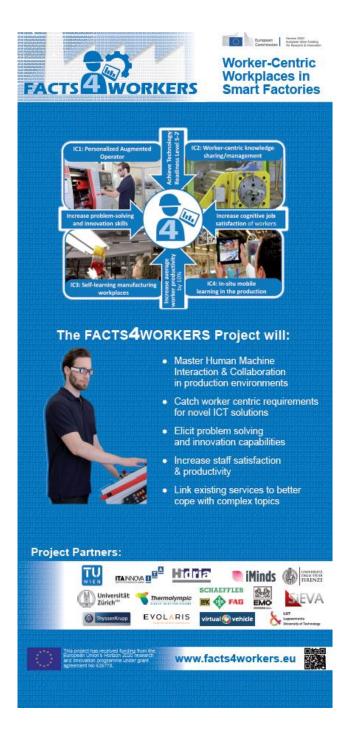


Figure 22: Project roll-up

3.4.3 Press Release

After the kick-off meeting we have prepared and published our first press release. The press release presents basic information about the project, project goals and use cases. It has been distributed to the project partners in order to publish it on their websites and in other media. We also have distributed it via social media.

Smart Factories: European research project focuses on the human component in tomorrow's production

The large scale European research project "FACTS4WORKERS" with a project volume of 7.9 million Euros and 15 European research partners over a timespan of four years deals with the topic of "Industry 4.0" and focuses on the human component of modern production. The consortium lead by VIRTUAL VEHICLE Research Center wants to show, how to create attractive and intelligent work places in a factory of the future and how therefore Europe can be boosted as a production location. Improved training and increase of investment in factories will help bring Europe new and better jobs.

Production is moving constantly away from European high-wage countries to so-called "best-cost" countries or to locations with low energy cost. To fight this trend the European industry is challenged to develop intelligent added-value concepts for the field of production. The EU-commission wants to reverse "the shrinking role of the industry" and restore the "attractiveness of Europe as a production location", says the responsible commissioner Antonio Tajani. With more investment in factories and research & development the amount the industry contributes to the European economic output should be increased from currently 15 to 20 per cent by 2020.

A large-scale research project now puts the worker into to the centre of future-oriented production concepts in order to render manufacturing jobs more attractive and help Europe to become more competitive. As of December 1st 2014 the VIRTUAL VEHICLE Research Center in Graz c oordinates the project "Worker Centric Workspaces in Smart Factories (in short "FACT4WORKERS"). The four year long research initiative is being funded through Horizon 2020, which is a EU funding programme for research and innovation of the European Commission, running from 2014 to 2020.

Ambitious goals in research

The results of this research project are supposed to initiate a new industrial era, which is characterized by the so-called "Smart Factory". The "Smart Workers" in those production sites will be ideally supported by information and communication technology in order to improve the manufacturing process regarding flexibility, efficiency, and reliability. This results in a local benefit in competition, and (central) European production locations can be secured in the long term.

Smart Factory

In a "Smart Factory", the production site of the future, the focus lies on the worker as the most flexible element involved in the manufacturing process. He or she becomes a "production knowledge worker" and is supported by optimized information and communication technology, self-learning working environment, and in-situ learning while operating the machine.

The intended digitalisation is not limited to single factories, it will affect entire added value networks. This can be achieved via so-called "cyber-physical systems", which are systems consisting of various components (IT, software, mechanical parts, etc.) that communicate via the internet or other means of communication.

[..]

Link to the press release:

http://facts4workers.eu/projectlibrary/disseminationmaterial/

3.4.4 Acknowledgement of EUROPEAN UNIONS'S funding

All dissemination material has to <u>include the EU emblem</u> and the following <u>acknowledgement</u>:

»This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 636778.«

3.5 Project publications

Blog posts, external releases and papers are key dissemination tools. All of these activities will ensure the long lasting impact beyond project duration, particularly in relation to academic discourse in the area.

3.5.1 Published Blog posts

NUMBER	TITLLE	PARTNER	TUMBLR	WEBSITE BLOG
1	Kick-off meeting in Graz	SIA		X
2	Project workshop (WP1)	SIA	X	X
3	1st general assembly meeting	SIA	X	X
4	1st official FACTS4WORKERS press release	VIF	X	
5	Vision	VIF	X	
6	Second project meeting: The Kick-off meeting of the WP2, WP3, WP4 and WP5	HIR	X	
7	Project presentation to high school students	HIR	X	
8	Project presentation at ESWC 2015 conference	SIA, IMI		X
9	Visit our video from the TECSMEDIA conference on 10. June 2015 in Zaragoza, Spain	SIA, ITA		X
10	Visit our project brochure	SIA		X
11	FACTS4WORKERS presented at conference MOTSP 2015	VIF	X	X
12	FACTS4WORKERS presentation at TECSMEDIA 4 workshop	ITA	X	X
13	FACTS4WORKERS presented at Aragón Radio program	ITA		X
14	FACTS4WORKERS talk at Kremser Wissensmanagement Tage	VIF	X	X
15	Google Glass "Enterprise Edition"	EVO	X	X

16	Mobile eye tracking - Tobii Glasses 2	ITA	X	
	Workshop on Opportunities in Horizon			
17	2020	VIF	X	
	Why you should or shouldn't be involved			
18	in EU Horizon 2020 projects	VIF	X	
	FACTS4WORKERS talk at the ICPR			
19	Conference	LUT, SIA	X	X
	FACTS4WORKERS presentation at			
20	Industrie 4.0 conference	VIF, SIA	X	X
21	Project presentation at SiEVA's event	SIA	X	X
	FACTS4WORKERS networking			
	workshop at Mensch und Computer			
22	2015	VIF	X	X
	The changing world of work presented			
23	at ILERA World Congress	LUT		X
	FACTS4WORKERS meets SO-PC-PRO in			
24	Graz	VIF		X
	FACTS4WORKERS Dissemination			
25	Workshop	SIA, VIF		X
	FACTS4WORKERS presented at			
26	COILTECH EXPO in Italy	HIR, SIA		X
	FACTS4WORKERS at KnowTech 2015			
27	Conference	VIF		X
28	Fruitful Cooperation of FoF-4 projects	VIF	X	X
	Digital assistance systems as			
	empowerment for workers in the smart			
29	factory	EVO		X
30	Smart Factories at KnowTech 2015	VIF	X	X
31	Radio broadcast on ICT in Industry 4.0	VIF		X

Figure 23: Published blog posts

3.5.2 Publications and mentions

1.) Published peer-reviewed journal papers

- Stocker A.; Brandl P.; Michalczuk R.: Rosenberger M. (2014): Mensch-zentrierte IKT-Lösungen in einer Smart Factory, E&I Elektrotechnik und Informationstechnik, October 2014, Volume 131, Issue 7, pp 207-211. Link: http://link.springer.com/article/10.1007%2Fs00502-014-0215-z
- 2. Richter A.; Heinrich P.; Stocker A.; Unzeitig W. (2015): Der Mensch im Mittelpunkt der Fabrik von morgen, HMD Praxis der Wirtschaftsinformatik, October 2015, Volume 52, Issue 5, pp 690-712.

Link: http://link.springer.com/article/10.1365/s40702-015-0173-x

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2.) Published non-reviewed journal papers

- 1. Schmeja M.; Wifling M.; Kittel C.; Stocker A. (2014): Informations und Kommunikationstechnologie für Smart Worker, Virtual Vehicle Magazine 20/2014, page 38-39.
 - Link: http://www.v2c2.at/fileadmin/user_upload/pdfs/VVM20_Area-A_v18-FINAL-LR.pdf
- 2. Wifling M.; Wolfgang U.; Schmeja M.; Stocker A. (2015): Smart Factories durch Smart Workers, Wingusiness 1/2015, page 36-37.
 - Link: http://issuu.com/beablond/docs/heft 01 2015 end
- 3. Schmeja M.; Wifling M.; Kittel C.; Stocker A. (2015): Information and Communication Technology for Smart Workers, Virtual Vehicle magazine number 21/2015, page72-73.
 - Link: http://www.v2c2.at/fileadmin/user_upload/pdfs/VVM/VVM-21-International_v37-final_web.pdf
- Gerhard D. (2015): Facts4workers- Worker centric workplaces in smart factories, WiGeP News 2/2015, October 2015, page 16-17.
 Link:
 - http://www.wigep.de/fileadmin/download/wigep/WiGeP News 2015 V17 2 HOMEPAGE.pdf

3.) Conference papers

In the first year of the project we have achieved **6 papers**. All Papers are published on the website and are free for download.

1. Paper from 12th ESWC EU Networking Event

Arndt D.; Van Herwegen J.; Verborgh R; Mannens E.; Van De Walle R. (2015): Facts4workers: Worker centric Workplaces in Smart Factory, 12th ESWC 2015, June 2015.

Link: http://facts4workers.eu/wp-content/uploads/2015/11/Paper-from-12th-ESWC-EU-Networking-Event.pdf

2. Paper from the 23rd International Conference on Production Research

Hannola L.; Kutvonen A.; Papinniemi J.; Lampela H. (2015): A conceptual framework for linking worker and organizational needs to data and information requirements, 23rd International Conference on Production Research, August 2015

 $\label{link:http://facts4workers.eu/wp-content/uploads/2015/11/ICPR-2015-Framework-for-linking-worker-and-organizational-needs-ByHannolaKutvonenPapinniemiLampela.pdf$

3. <u>Paper from the 17th ILERA (International Labour and Employment Relations Associations) World Congress</u>

Lampela H.; Heilmann P.; Hurmelinna - Laukkanen P.; Lämsä T.; Hyrkäs E.; Hannola L. (2015): Identifying worker needs and organizational responses in implementing knowledge work tools in manufacturing, 17th ILERA World Congress, September 2015.

 $\label{link:http://facts4workers.eu/wp-content/uploads/2015/11/FACTS4WORKERS-ILERA-2015-paper 1.pdf$

4. <u>Paper from MOTSP 2015 - International Conference Management of Technology - Step to Sustainable Production</u>

Wolfgang U.; Wifling M.; Stocker A.; Rosenberger A. (2015): Industrial challenges in human –centred production, MOTSP 2015, June 2015.

Link: http://facts4workers.eu/wp-content/uploads/2015/11/MOTSP-2015.pdf

5. Paper from Mensch und Computer

Stocker A.; Denger A.; Wifling M.; Fritz J.; Kaiser C.; Kittl C.; Richter A. (2015), Smart factories: Mitarbeiter-zentrierte Informationssysteme für die Zusammenarbeit der Zukunft, Mensch und Computer 2015, September 2015.

Link: http://facts4workers.eu/wp-content/uploads/2015/11/KnowTech-2015 e-Book FACTS4WORKERS.pdf

6. Paper from KnowTech 2015

Richter A.; Lang A-K.; Denner J.; Wifling M. (2015): Industrie 4.0.: Der Menscg im Mittepunkt der Produktion von morgen - Wissensmanagment für mobile Instandhalter bei der ThyssenKrupp Steel Europe AG, KnowTech 2015, October 2015.

Link: http://facts4workers.eu/wp-content/uploads/2015/11/KnowTech-2015_e-Book FACTS4WORKERS.pdf

In accordance with our target we should achieve more than 20 papers. We have already published 8 papers (2 peer-reviewed journals and 6 reviewed conference papers).

4.) <u>Others</u>

- TU Wien website: Smart Factories: European research project focuses on the human component in tomorrow's production.
 Link: http://www.ikl.tuwien.ac.at/mechanical engineering informatics and virtual productodevelopment/research/facts4workers/EN/
- 2. PQRM TD: Facts 4 Workers.
 Link: http://www.pqrm.at/2015/02/27/industrie-4-0-facts-4-workers/
- 3. SCIAM: Europäisches Forschungsprojekt stellt den Menschen in den Mittelpunkt

der Produktion von morgen.

Link: http://www.sciam-online.at/europaeisches-forschungsprojekt-stellt-den-menschen-den-mittelpunkt-der-produktion-von-morgen/

4. Computerwelt: Aktuelle IT-News Österreich: Smart Factories: Europäisches Forschungsprojekt stellt Menschen in den Mittelpunkt.

Link: http://www.computerwelt.at/news/wirtschaft-politik/forschung-wissenschaft/detail/artikel/110367-smart-factories-europaeisches-forschungsprojekt-stellt-menschen-in-den-mittelpunkt/

5. IMC-International M2M Council: Human centred smart workplaces increase smart factory productivity.

Link: http://www.im2mc.org/humancentred

6. Kooperation-International: Smart Factories: Europäisches Forschungsprojekt stellt Menschen in den Mittelpunkt der Produktion.

Link: http://www.kooperation-international.de/detail/info/smart-factories-europaeisches-forschungsprojekt-stellt-menschen-in-den-mittelpunkt-der-produktion.html

7. TM MARTES 20.ENE.2015 HERALDO DE ARAGÓN:

FACTS4WORKERS>EMPLEADOS SATISFECHOS VÍA TIC.

Link: http://prensa.unizar.es/noticias/1501/150120 z0 HE-TM01.pdf

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 Link: http://www.heraldo.es/noticias/suplementos/2015/01/24/facts4workers_empleados_satisfechos_via_tic_334878_314.html
- 9. SiEVA Website: Meeting of the partners of the European consortium FACTS4WORKERS / Srečanje partnerjev evropskega konzorcija FACTS4WORKERS. Link: http://www.sieva.si/en/news/#news-43/
- 10. HIDRIA Website: Prvo srečanje evropskega konzorcija FACTS4WORKERS. Link: http://si.hidria.com/si/o-nas/novice-dogodki/8948/detail.html
- 11. LUT Research Portal: Worker-Centric Workplaces in Smart Factories (FACTS4WORKERS).

Link: http://research.lut.fi/converis-lut/publicweb/project/17452

- 12. Itainnova website: Smart Factories: Itainnova participa en el proyecto de investigación europeo centrado en el componente humano de la fábrica del future. Link: http://www.itainnova.es/tag/facts4workers
- 13. myScience: Smart Factories.

Link: http://www.myscience.at/wire/smart_factories-2015-tuwien

- 14. Electronic Specificer: Project aims to boost Europe as a production location. Link: http://production.electronicspecifier.com/around-the-industry/project-aims-to-boost-europe-as-a-production-location
- 15. DigitalManufacturing: Smart Factories: Forschungsprojekt stellt Menschen in den Mittelpunkt der Produktion.

 $\label{link:http://www.digital-manufacturing-magazin.de/smart-factories-forschungsprojekt-stellt-menschen-den-mittelpunkt-der-produktion$

16. Brochure: Razvojni dosežki 2011-2014. Project presentation in the brochure of the company SiEVA, page 38.

Link: http://www.sieva.si/userfiles/files/sieva-razvojni-dosezki-2011-2014.pdf

17. SFG: FACTS4WORKERS.

Link: http://www.sfg.at/cms/371/8216/FACTS4WORKERS/

- 18. Inventor magazine: Forschungsprojekt stellt Menschen in den Mittelpunkt der Produktion.
 - Link: http://www.inventor-magazin.de/smart-factories-forschungsprojekt-stellt-menschen-den-mittelpunkt-der-produktion
- 19. Evolaris website: Facts4Workers: Horizon 2020 Projekt im Bereich Industrie 4.0 Link: http://www.evolaris.net/de/project/horizon-2020-projekt-industrie-4-0/
- 20. Iminds website: Worker Centric Workplace in Smart Factories Link: http://www.iminds.be/en/projects/2015/07/03/facts4workers
- 21. EMO orodjarna website: Internationale Entwicklungsprojekte Link: http://www.emo-orodjarna.com/index_de.php?area=razvojni_tuji
- 22. University of Zurich website: Worker-Centric Workplaces in Smart Factories (FACTS4WORKERS)
 - Link: http://www.ifi.uzh.ch/imrg/research/digital-work-design/facts4workers.html
- 23. Virtual Vehicle website: FACTS4WORKERS: Industry 4.0 on the Road Link: http://www.v2c2.at/en/details/article/facts4workers-industrie-40-on-the-road/
- 24. Itainnova website: Cooperación entre los proyectos FACTS4WORKERS y Satisfactory
 - Link: http://www.itainnova.es/noticias/cooperacion-entre-los-proyectos-facts4workers-v-satisfactory
- 25. SI21: Facts4workers: Nova delovna mesta za tovarne prihodnosti
 Link: https://www.si21.com/Gospodarstvo/FACTS4WORKERS_NOVA_DELOVNA_MESTA_ZA_TOVAR_NE_PRIHODNOSTI/
- 26. Evolaris website: EU-Forschungsprojekt: Der Mensch im Fokus von Industrie 4.0 Link: http://www.evolaris.net/de/press/smart-factories-horizon-2020/?referrer=871

3.6 Project presentations

The partners regularly participate at external events to achieve the following goals:

- present the project and project results to the audience,
- for promote the project and its goals to the relevant stakeholders,
- increase the project visibility in the public, and
- establish new contacts for exploitation of results.

In the first year of the project we have been very active in the field of dissemination. We have presented the project at numerous different industrial and scientific conferences, trade shows, workshops, radio stations and panel discussions.

The table below presents all conducted dissemination activities:

No	Type of dissemination activity	Name of event / title	Period / Location	Author / Responsible person
1	Invited conference talk	International Conference on Knowledge Technologies and Data - Driven Business. September 201 Graz (AT) Title: Worker - Centric Workplaces in Smart Factory.		Alexander Stocker, Michael Schmeja, Martin Wifling
2	Invited conference talk	CMG - AE Convention; Computer Measurement Group - Austria & Eastern Europe - "Industrie 4.0: Revolutionäre Anforderungen an die IT oder Business as Usual? <u>Title:</u> Worker Centric Workplaces in Smart Factories - Introduction.	February 2015 / Vienna (AT)	Martin Wifling
3	Project presentation	<u>Title:</u> Project presentation to high - school students (with participants in computer informatics and programming classes).	March 2015 / Spod- nja Idrija (SLO)	Tobija Kovač
4	Invited conference talk	4. Wissensmanagement - Tage Krems. <u>Title:</u> Mensch - zentrierte IKT in Smart Factories Anwendungsfälle aus dem Industrie - 4.0 -Projekt FACTS4WORKERS.	April 2015 / Krems (AT)	Martin Wifling, Wolfgang Unzeitig
5	Invited conference talk	Mensch - zentrierte IKT in Smart Factories Anwendungsfälle aus dem Industrie - 4.0 - Projekt FACTS4WORKERS. Title: Human Resources - Expertenforum: "Arbeiten in der digitalen Welt - Was bedeutet Industrie 4.0 für die Mitarbeiter konkret" at Strategische Partnerschaft Sensorik e.V.	April 2015 / Stuttgart	Michael Schmeja
6	Trade fair	Forma Tool Fair	April 2015/ Celje (SLO)	Matjaž Milfelner
7	A Panel discussion	Smart Manufacturing - Industry 4.0 <u>Title</u> : Keynote on Smart Manufacturing	May 2015 / Vienna (AT)	Detlef Gerhard
8	Conference: Paper and talk	MOTSP2015 - International Conference Management of Technology – Step to Sus- tainable Production (MOTSP 2015)	June 2015 / Brela (CRO)	Wolfgang Unzeitig, Martin Wifling,

		<u>Title:</u> Industrial challenges in human - centred production		Alexander Stocker
9	Invited talk with work- shop	Zukunftstag der steirischen Wirtschaft - Smart Production & Services <u>Title</u> : Worker Centric Workplaces in Smart Factories Introduction	June 2015 / Graz (AT)	Martin Wifling
10	Invited talk	3. Zukunftstag der steirischen Wirtschaft - Smart Production & Services <u>Title</u> : Worker Centric Workplaces in Smart Factories	June 2015 / Graz (AT)	Michael Schmeja
11	Conference: Poster & Brainstorm	ESWC EU Networking Event <u>Title</u> : Presentation of FACTS4WORKERS Project	June 2015 / Portoroz (SLO)	Erik Mannens
12	Workshop	TECSMEDIA - "Challenges and Opportunities for the factories Of The Future	June 2015 / Zaragoza (ES)	Sergio Mayo
13	Meeting	ESTEP Committee Title: Presentation of FACTS4WORKERS Project as example for impact of industry 4.0 to HR Management	June 2015 / Duisburg (DE)	Ann-Kathrin Lang, Peter Limberger
14	Panel Discussion on Austrian National Radio Programme (ORF)	Ernst Mach Forum - Arbeit 4.0. Wo bleibt der Mensch im Zeitalter der Automatisierung? Labour 4.0 - Implications on workers in the age of automation? Title: Industrie 4.0, Internet of Things and Future Workplaces	June 2015 / Vienna (AT)	Detlef Gerhard
15	Trade Fair	METEC Trade Fair &2 nd European Steel Technology and Application Days	June 2015/ Düsseldorf (DE)	Markus Brummayer
16	Interview on the Radio	Collaboration at regional Aragon radio station program <u>Title</u> : FACTS4WORKERS as an example of Industry 4.0	July 2015 / Zaragoza (ES)	Sergio Mayo

17	Conference Keynote	22. Industriebauseminar, INTEGRATED PLANNING FOR INDUSTRIAL BUILDING 4.0	July 2015 / Vienna (AT)	Detlef Gerhard
18	Industrial Conference	Industrie 4.0 Forums <u>Title</u> : "Smart Worker" - the role of men in the factory of the future	July 2015 / Cham (DE)	Michael Schmeja
19	Conference: paper and talk	International Conference on Production Research (ICPR)	August 2015 / Ma- nila (Philippines)	Lea Hannola, Antero Kutvonen, Jorma Papinniemi, Hannele Lampela
20	Conference: abstract and talk	Work2015 Conference - New Meanings of Work	August 2015 / Turku (FI)	Hannele Lampela
21	Conference: paper and talk	ILERA World Congress	September 2015 / Cape Town (South Africa)	Lea Hannola,
22	Presentation	Project presentation at SiEVA's event	September 2015 / Spodnja Idrija (SLO)	Samanta Krapež
23	Conference and paper	Conference: Mensch und computer	September 2015 / Stuttgart (DE)	Alexandre Richter, Alexandre Stocker
24	Expo and conference	COILTECH	September 2015 / Pordenone (IT)	Tobija Kovač
25	Conference	World Usability Congress <u>Title</u> : Smart Production-Workers Requirements on ICT	October 2015 / Graz (AT)	Martin Wifling

26	Plenum talk / Smart Factories: Der Mensch im Mittelpunkt der Produktion von mor- gen	KnowTech – Wissensmanagement, Social Collaboration, Industrie 4.0 /	October 2015 / Hanau (DE)	Martin Wifling, Alexander Richter, Ann Kathrin Lang
27	Outreach activity, Invited talk	Digitaldialog "Digitale Assistenzsysteme in der Fabrik von morgen" <u>Title</u> : Smart Workers und attraktive Arbeitsplätze in der Industrie 4.0	November 2015 / Graz (DE)	Peter Brandl
28	Interview on the Radio	Radio interview <u>Title</u> : Ö1 MATRIX "Industrie 4.0"	November 2015 / Graz (AT)	Martin Wifling

Figure 24: Conducted Dissemination activities in the first year of the project

4 Summary of planned and conducted activities

The following table summarizes communication channels and key performance indicators, which are relevant for the consortium partners with respect to the targeted audience:

Channel	Targets	Metrics
Project website	Everyone	# visitors > 300/month # subscribers > 1,000
Blogs and social media	Exploitation partners, research community, end user	# blog posts > 10/month #conversations > 3/month
Private conversations	Exploitation partners, other projects, standards bodies, policy makers, trade organisations.	# conversations
Scientific publications	Research community, exploitation partners.	# papers > 20 # citations
Other publications	End users, exploitation partners	# articles > 16 Audience > 100,000
Conferences	Research community, end users, and exploitation partners.	# presentations > 15 Audience > 1,000
Trade shows	Exploitation partners, end users	# interacting visitors visitor profile # mentions in press
Research-through communications	Other projects, trade organisations	Reach - through audience

Figure 25: Summary of communication channels

In the following table we will present the summary of achieved results in the first year of the project in accordance with set goals.

Channel	Metric (Plan)	Achieved results in the first year of the project
Project website	# visitors > 300/month # subscribers > 1,000	From April 2015 – October 2015, we have on an average value not only achieved the target, but have exceeded it by 169%
Blogs and social media	# blog posts > 10/month #conversations > 3/month	On an average value, we have not only achieved the target, but we have exceeded it.
Private conversations	# conversations	We have conducted numerous conversations via Projectplace, Webex meetings, and telephone conferences.
Scientific publications	# papers > 20 # citations	In the first year of the project we have intensively contributed to the scientific community. A Peer-reviewed journals: 2 Conference papers: 6
Other publications	# articles > 16 Audience > 100,000	In the first year of the project we have intensively contributed to the public/industrial communities: Non reviewed journals: 4 Other publications: 26
Conferences	# presentations > 15 Audience > 1,000	In the first year of the project we have presented project at 12 conferences.
Trade shows	# interacting visitors visitor profile # mentions in press	In the first year of the project we have presented project in three Trade shows.
Research-through communications	Reach - through audience	We have conducted networking with the coordinators of the two human-centred manufacturing projects Satisfactory and SO-PC-PRO.

Figure 26: Summary of achieved results in the first year of the project

The table above shows that FACTS4WORKERS has already performed very well during the first year of the project in terms of planned and satisfied communication and dissemination goals.

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- 3. Project website: http://facts4workers.eu/
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About the project

The high ambition of the project FACTS4WORKERS is to create Factories of the Future with a pervasive, networked information and communication technology that collects processes and presents large amounts of data. These smart factories will autonomously keep track of inventory, machine parameters, product quality and workforce activities. But at the same time, the worker will play the central role within the future form of production. The ambition of the project is to create »FACTories for WORKERS« (FACTS4WORKERS), to strengthen human workforce on all levels from shop floor to management since it is the most skilled, flexible, sophisticated and productive asset of any production system and this way ensure a long-term competitiveness of manufacturing industry. Therefore a serious effort will be put into integrating already available IT enablers into a seamless and flexible Smart Factory infrastructure based on work-centric and data-driven technology building blocks.

These solutions will be developed according to the following four industrial challenges which are generalizable to manufacturing in general:

- Personalized augmented operator,
- Worker-centric rich-media knowledge sharing management,
- Self-learning manufacturing workplaces,
- In-situ mobile learning in the production.

PROJECT PARTNERS

The FACTS4WORKERS project is composed of 15 partners from 8 different European countries:

Virtual Vehicle Research Center Hidria TC Tehnološki center d.o.o. Universita degli Studi di Firenze, Department of industrial Engineering Technische Universität Wien ThyssenKrupp Steel Europe AG Hidria Rotomatika d.o.o., Industrija Rotacijskih Sistemov iMinds VZW Sieva d.o.o. University of Zurich, Department of Informatics Thermolympic S.L. EMO-Orodjarna d.o.o. Evolaris Next Level GmbH Itainnova - Instituto Technologico de Aragon Schaeffler Technologies AG & Co. KG Lappeenranta University of Technology Austria Slovenia

Italy Austria Germany

Slovenia Belgium Slovenia

Switzerland Spain Slovenia Austria

Spain Germany Finland





















SCHAEFFLER











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SUMMARY

This deliverable (D 7.3) described the achieved results in the first year of the project. The deliverable described the main focuses in the project dissemination area, their purpose and the achieved results. The project partners' devised broad dissemination campaign, encompassing different tools (physical materials - brochures, poster, web page, social media), covering a wide array of interested stakeholders on different levels. Since the project's success depends on successful dissemination of developed ideas on a wide

industrial level, that would encompass and affect as much industries and employees as possible, wide dissemination activities and a wide outreach are both crucial. The past 12 months have been used to set up a basic dissemination frame. There are some results in some fields that leave for more to be desired but the gained knowledge and experience from the past 12 months will now be used for a much more intensive dissemination campaign from all project partners in the future

