ECSEL2017-2-783162

FitOptiVis

From the cloud to the edge - smart IntegraTion and OPtimisation Technologies for highly efficient Image and VIdeo processing Systems

Deliverable: D8.8 Final Dissemination and Communication Plan and Report

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Responsible WP8

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Dissemination level		
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PP	Restricted to other programme participants (including the Commission Service	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (excluding the Commission Services)	

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1 INTRODUCTION

Dissemination has been an important element of the FitOptiVis project. It was carefully planned and implemented in order to spread awareness about this ECSEL funded project to a wide audience, including its end-users. Some of the activities will continue during the remainder of the project, and publications may even be accepted and/or presented after that. In general, the goal has been to help guarantee an optimal exploitation of the project results and the long-term sustainability of the FitOptiVis pilots, demonstrators, and technology platforms. For this reason, the FitOptiVis participants have formulated an initial dissemination plan that describes the objectives and foreseen channels for the dissemination of the knowledge generated by the project. This plan (D8.3: Preliminary Dissemination and Communication plan and report) was in compliance with the FitOptiVis Annex 1 (ECSEL-2017-1-737451), the FitOptiVis Consortium Agreement, and the Communication Guidelines for Projects/Studies published in 2018. The plan was constantly kept under scrutiny and revised, and in month 24 of the project an update of the report on the dissemination activities was delivered (D8.5 Updated of the Dissemination & Communication Plan and Report).

Table 1 - List of FitOptiVis beneficiaries/participants:

Part. No.	Participant organisation name	Participant short name	Country
1	(Coordinator) Philips Healthcare	PHL	NL
2	Futura	FUT	NL
3	TU Delft	TUD	NL
4	TU Eindhoven	TUE	NL
5	CAMEA	CAMEA	CZ
6	Charles University	CUNI	CZ
7	Rex	REX	CZ
8	Brno University of Technology	BUT	CZ
9	University West Bohemia	UWB	CZ
10	Ustav teorie informace a automatizace AV CR, v.v.i.	UTIA	CZ
11	Hurja Solutions Oy	HURJA	FI
12	Nokia Technologies Oy	NOKIA	FI
13	Tampere University of Technology	TUT	FI
14	University of Turku	UTU	FI
15	Visidon Oy	VISI	FI
16	Hi Iberia	HIB	ES
17	Instituto Tecnológico de Informática	ITI	ES
18	RGB	RGB	ES
19	Seven Solutions	7SOLS	ES
20	Schneider Electric España S.A.	SCHN	ES
21	Thales Alenia Space	TASE	ES
22	University Cantabria	UC	ES
23	University Granada	UGR	ES
24	Abinsula	ABI	IT
25	Aitek	AITEK	IT
26	Società Acquedotti Tirreni	SAT	IT
28	Isarail	ISR	IT
29	Università degli Studi di Cagliari	UNICA	IT
30	Università degli Studi di Sassari	UNISS	IT
31	Università degli Studi dell'Aquila	UNIVAQ	IT

2 FITOPTIVIS DISSEMINATION STRATEGY

2.1 Means of communication

In order for dissemination to be effective, multiple communication channels were used in order to be able to effectively reach the desired target audiences. In this section an impression of the dissemination strategy over the full project period will be given, while in the remainder of this deliverable a more detailed account will be presented.
One focus of dissemination has been on scientific publications and to address the academic research community. Publications within the area of interest of the project have included both technology-oriented journals, to disseminate the FitOptiVis achievements on transversal methods, tools and components, as well as more application oriented ones, to vertically cover the different project assessment domains, and even journals covering innovation management. Project publishable results naturally fell mostly into one of the first two categories, with some overlap between the two.

In addition to journal publications, results were presented at conferences too, with a similar division between technology, application and innovation management-oriented venues, as in the case of journal publications.

Several conferences were accompanied by exhibitor presentations/booths and tutorials, where FitOptiVis partners originally planned to present and inform visitors about project product innovations and/or can push for FitOptiVis technologies usage by means of guided lectures on benefits and demo examples. The actions already done in this sense were intended to guarantee that FitOptiVis achieved results were presented here to complement the scientific communication and reached a larger visibility through direct point-to-point discussions and people engagement. Unfortunately COVID-19 imposed rather strong limitations to this type of dissemination, but virtual presentations and booths were used when such solutions were made available. The results of those virtual events were a bit mixed, but in the global situation the virtual events were the best possible way to have any activity.

The communication and dissemination approach of FitOptiVis was implemented at different levels. It was based on solid project-level sharing of knowledge and communication patterns and it extended gradually to different target-user groups, from the FitOptiVis network to the general public. This approach is illustrated in Figure 1.

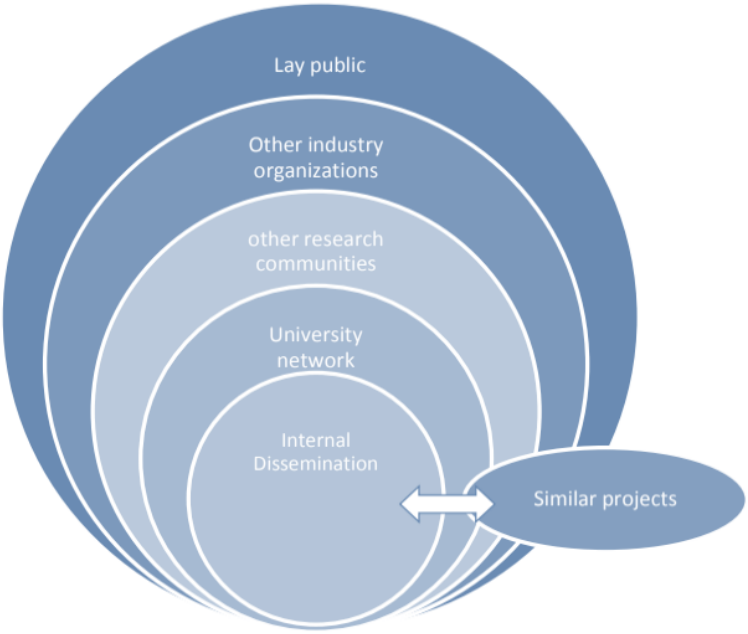

Figure 1, FitOptiVis Dissemination Strategy

2.2 Target Groups

Several important target audiences for dissemination activities were identified. These included academic and industrial researchers, interested parties in the following fields: Image and Video Processing Community, Design and Technologies, Computer Aided Design, Cyber Physical and Embedded Systems, Verification and Formal Methods. Moreover, also stakeholders and general public were important FitOptiVis dissemination targets.

Different dissemination products were expected to appeal differently to each of these categories. Therefore it was necessary to be aware of what the focus of dissemination was expected to be during the different stages of the project, and how the results to be disseminated were to be best tailored to their target audience. Due to the end user boards the partners have directed their actions towards the finetuned goals.

As the project progressed towards the end, it was expected that the focus of the dissemination would - next to the pilots and demonstrators – increasingly also include the pilot products that demonstrate the technologies in practice. This did take place, and most of the use cases have produced video demonstrators available to the general public.

2.3 Timing

The gradual shift in focus of dissemination activities described in the previous section resulted in a different focus of the various dissemination products during the different stages of the project.

Concerning the timing of the dissemination strategy, three distinct phases of implementation were identified, going from project overview to the dissemination of the final outcomes. These phases are listed in Figure 2.

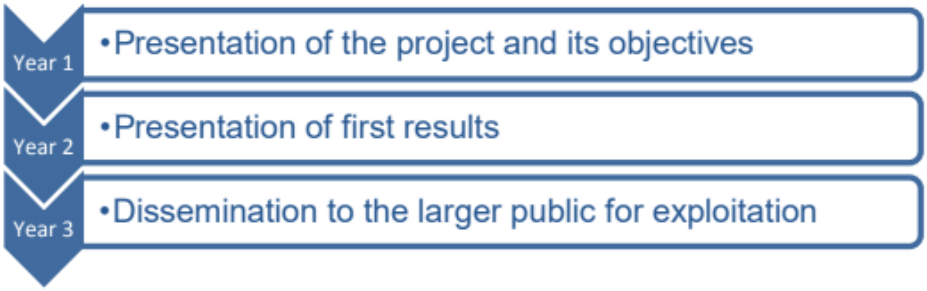

Figure 2, Timing of FitOptiVis dissemination

2.4 Internal Dissemination Strategy

Continuous and effective internal communication is always a key to the success of large international projects such as FitOptiVis. For this reason, internal dissemination must be considered as an essential part of the dissemination strategy as a whole. Internal communication was managed in a way that allowed the partners to:

- Keep track of project-related decisions and action points.
- Clearly communicate the role and responsibilities of each project participant.
- Communicate on WP and demonstrator progress.
- Disseminate the right level of information to project participants.
- Identify problems and provide solutions.

Some of the main tools used for internal dissemination included:

- Workshops that were arranged roughly every 4 months (during COVID-19 outbreak teleworkshops) where the partners presented and demonstrated current results, shared visions on the next steps and generally kept informed about the progress made by other partners.
- A board meeting each month (mostly teleconference) that allowed relevant decisions/actions to be promptly forwarded to the rest of the consortium.
- WP specific teleconferences, at the rate decided by the WP leaders, allowing more in depth discussions on technical details and sharing of knowledge between partners.
- A database of dissemination activities, which was updated regularly by all of the partners as they had new dissemination activities to report.

Especially the workshops held in the pre-COVID-19 era were very valuable due to unscheduled discussions during the breaks and evenings. The partners were able to deepen the relations, and the more junior participants had a change to meet a wide variety of experts from all over the Europe. The introductions and discussions provided valuable ideas, both within the project and also out of its scope. Sadly, the COVID-19 time saw only teleconferences, which limited these unscheduled encounters greatly. On the other hand, the cost structure of teleconferencing allowed more people to participate, as travel and housing cost was not an issue.

2.5 External Dissemination Strategy

Much of the effort was aimed at ‘external communication’ to promote the project, and disseminate results. The major external dissemination objectives were to:

- Identify the different external user's groups that could benefit from the FitOptiVis pilots and demonstrators and project's results and the best channels of communication to reach them.
- Effectively use these communication channels to present the FitOptiVis project's results.
- Establish links and encourage synergies with similar projects and initiatives.
- Provide the foundation of a comprehensive exploitation strategy.

Details of each dissemination activity/tool are provided in Section 4 ("Dissemination Tools and activities")

2.6 COVID-19 Outbreak Summary

After M21 the project has been struggling with COVID-19 outbreak along with the rest of the world. Most of the dissemination activities, e.g. seminars, exhibitions and conferences, used to depend on personal contact and therefore have been cancelled. The project participants have been encouraged to focus on academic journals and other publishing not requiring physical presence.

The workshops after the outbreak were converted to virtual workshops held in MS Teams. Regular WP specific meetings and the project board have been using teleconferencing during the whole project, so the technologies and practices are not new. The minimum requirements have been fulfilled in these virtual events, with all the information exchange that was needed to successfully implement the project. However, all of the unscheduled face-to-face communication has been severely lacking as a direct result of the virtualization. Luckily the first half of the project saw normal workshops, so the participants were already well acquainted by the time the virtualization kicked in.

3 GENERAL DISSEMINATION RULES

This chapter presents the rules that were applied during the project.

3.1 Presentation and publication guidelines

Any publication related to work done under FitOptiVis shall be sent to the Coordinator, Philips, and then by the Coordinator to the FitOptiVis Consortium participants at the earliest time possible, but at least 45 days before publication, together with sufficient information on the results it will disseminate. The latter will have 30 days to comment/object to the publication. Both can be waived by mutual agreement. For more details about publications, please refer to the FitOptiVis Grant Agreement (Article 29).
Open access, which can be either green or gold, publishing is to be preferred, actually the Grant Agreement states: “Each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results.” This needs to be considered while planning publications.

Any project presentation will be made using the project templates provided by Philips and will have to be circulated for comments to the consortium participants at the earliest time possible and prior to the meeting.

Presentations and publications must also comply with the clauses presented in sections 3.2 and 3.3 about graphic identity and compulsory acknowledgements.

3.2 Graphic Identity

This section describes the features that contribute to giving a common graphic identity to all dissemination activities allowing for a better visibility and recognition of the project.

3.2.1 Layouts and Templates

Common/similar layouts are used for FitOptiVis dissemination materials. The project colour theme is blue. Templates for project meeting minutes and PowerPoint presentations (see Figure 3) were made available by the project coordinator, Philips. The files can be found in the project repository.

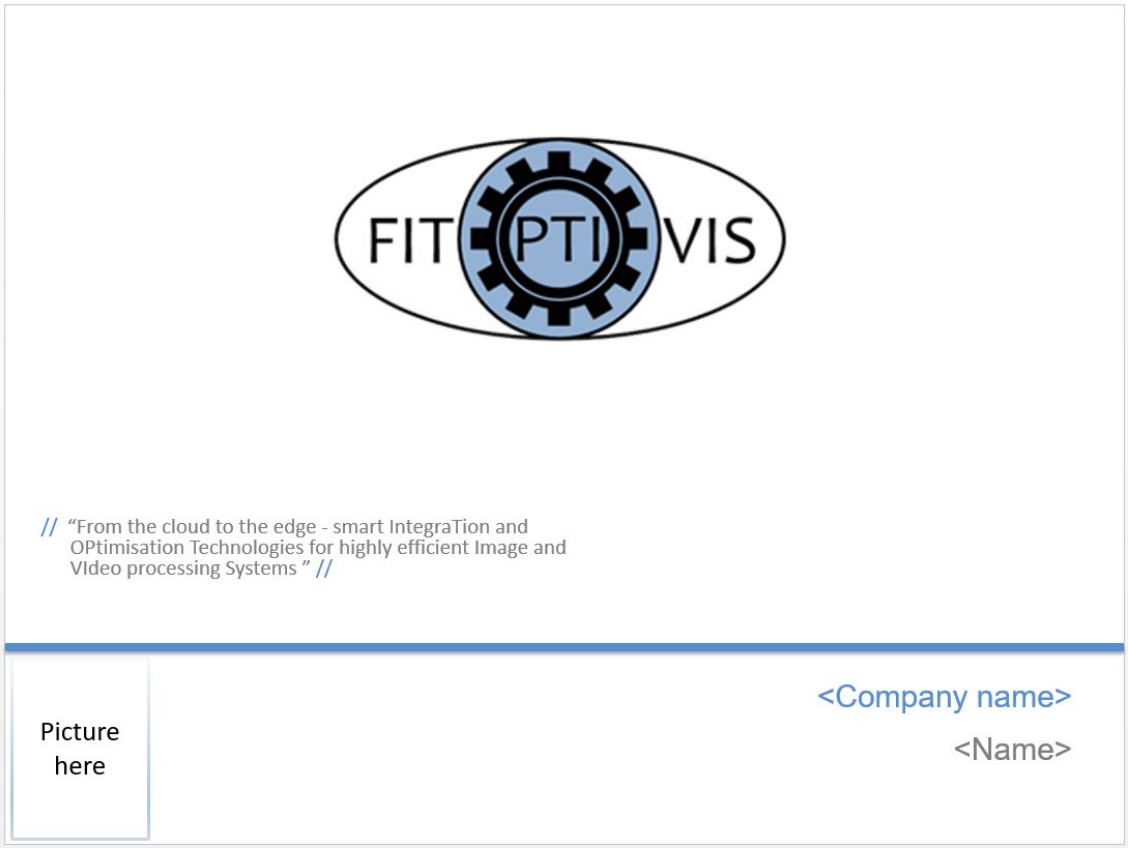

Figure 3, FitOptiVis slide design

3.2.2 Logos

The project logo, depicted in Figure 4, has been created. The project logo represents the connection between vision (eye) and technology (cogwheel). In addition to the project logo, the ECSEL-JU requires that the logo of ECSEL is used on any project publication and promotional material, as well as on the project's website (see also "3.3 Compulsory Acknowledgements" section).

Figure 4 - FitOptiVis logo.

3.3 Compulsory Acknowledgements

Any partner in the FitOptiVis project will in their dissemination activities clearly acknowledge the ECSEL with reference to the project “FitOptiVis” and the grant number ECSEL 2017-2-783162.

Preferred Reference

"This project/study is partially funded by the European Commission under the EU Joint Undertaking program ”ECSEL” +include link to ECSEL website (http://www.ecsel-ju.eu/web/index.php) Project “FitOptiVis” grant no: 2017-2-783162 + include link to the project website (https://www.ecsel.eu/projects/fitoptivis)

4 DISSEMINATION TOOLS

4.1 Internal Dissemination Tools

The project coordinator, Philips, and the participant in charge of the communication and dissemination work package (WP8, UTU), have put in place a variety of mechanisms to optimize the communication workflow.

4.1.1 Project Meetings

As detailed in the FitOptiVis Description of Work, there were several types of project meetings:

- Management Board meetings took place monthly (mostly remote teleconference calls).
- Project face-to-face workshops were held roughly 4 times per year.
- Work Package meetings and email lists were used as needed.

At the moment of writing this document (end of September 2021) so far 34 Management Board meetings and 12 Workshops have been organized. 7 first workshops were held as face-to-face (see Figure 5), while the rest have been virtual. The Management Board meetings and Workshops served to update each other on project results, and to align the activities for the next period. Apart from that the workshops were a great opportunity to build Pan-European networks and advertise the demonstrators.

Figure 5, Images from FitOptiVis workshops

4.1.2 Information sharing

FitOptiVis consortium members had access to a project private database that is shielded by a user code and password, to share project information, presentations and even photos. The user-friendly file transfer environment was structured around the different work packages (WPs), and was easily developed and modified by any identified/authorized FitOptiVis project participant. The files were stored in a version-controlled fashion (SVN), and the descriptions of the files were stored in the database. As all partners have had access to both tools, they have been able update all required information in a distributed manner. The database also provided a section for partner descriptions and personnel. This allowed a personnel listing with contact information, kept away from the general public, so that the partners were able to reach each other.

4.1.3 Other Tools

Other internal communication tools include mailing lists (participant, WP and at the consortium levels, provided by UTU), internal staff meeting and meeting minutes, web conferencing, and many others. Especially the time after COVID-19 outbreak required innovative use of remote technologies to facilitate the required level of communication. As an example, YouTube has been used to share the following video demonstrators:

- QRML: https://youtu.be/LX1ClDc0v88
- UC1: Water supply: https://youtu.be/qTNxVqLIgyE
- UC3: Habit tracker: https://youtu.be/GzNQByYu2-8
- UC4: 3D industrial inspection: https://youtu.be/sTO1c5OtkQU
- UC5: Road traffic surveillance: https://youtu.be/McFE2l8MJ14
- UC7: Sustainable safe MRI: https://youtu.be/867F9zbjYDg
- UC8: Robots Calibration: https://youtu.be/UULVUJpPxCc and https://youtu.be/NyCPnUpGOFw
- UC9: Surveillance of smart-grid critical infrastructure: https://youtu.be/V6KWc_YVqmY
- UC10: Autonomous exploration: https://youtu.be/2ONYczihm1s

4.2 External Dissemination Tools

External dissemination included actions aimed at ensuring the visibility and awareness of the results outside the Consortium borders, i.e., in the scientific community, in academic institutions, in other research organizations, or among the lay public.

For example UGR presented FitOptiVis objectives and activities during the Workshop on Industrial Robotics and Computer Vision between the Univ. of Granada and the Korean Association of Robot Industry (KAR). This workshop was held at the Research Centre for Information and Communications Technologies (CITIC-UGR), in Granada (Spain) last March 1, 2019. UGR presented its low-latency solutions for computer vision processing and their application to robotics. During the workshop, collaboration activities between the Univ. of Granada and the Korean Association of Robot Industry were also discussed with KAR Team Leader Mr. Gyeong-jun Lee and KAR Strategy and Planning Team Leader Ms. Han-Byeol kim. More examples can be found from *D7.2 – Update of the Innovation, Standardization and Exploitation plan and report.*

4.2.1 Project Public Website

The FitOptiVis public website presented general project information, participant information, downloadable publications and deliverables (the public ones). Furthermore, it informed viewers about previous and forthcoming events and activities of the project as well as of other relevant projects and collaborations. Additional features were added as needed.

BUT initially designed the website of FitOptiVis (Figure 6) and hosted it during the project. The site will continue to be hosted for the required period. The website was updated on a continual basis by BUT who as the D8.1 Lead beneficiary was responsible for the website content until end of the project. Other FitOptiVis participants' contributions were requested and received throughout the project. Many partners have their own webpages focusing on FitOptiVis, as an example there is a website in the Schneider Electric domain to announce the project, and linked to the project website. https://www.se.com/ww/en/work/products/medium-voltage-switchgear-and-energy-automation/r-and-d-projects/fitoptivis.jsp

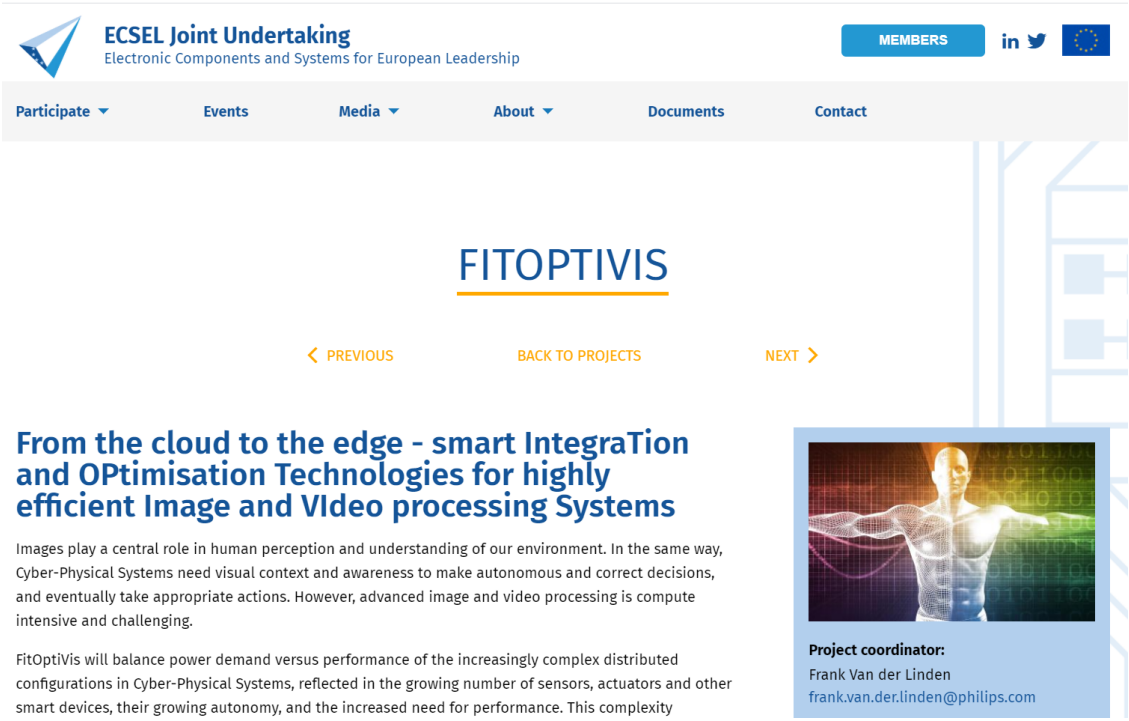

Figure 6, FitOptiVis public website: https://www.ecsel.eu/projects/fitoptivis

Statistics about FitOptiVis website during the period 16/5/2020 -- 15/5/2021:

-
- Period 16/5/2020 -- 15/5/2021
- unique users: 391
- unique visits: 1 575
- page views: 4 806
- avg. session duration: 2 min. 57 secs
- language: 75% English, 3% Polish, 4% Czech
- country: 43% USA, 7% Canada, 5% Czechia
- operating system: 31% Android, 25% Windows, 19% iOS

The social media accounts do not provide very detailed statistics, but as highlights:

Twitter:

- 55 followers
- Tweet with most displays was the one showing our project posters
  - It had 1044 impressions
- We had only few original tweets
  - We mostly retweeted posts produced by other partners through their own channels

FB:

- 15 followers
- Best posts had 337 and 123 impressions

4.2.2 Publications and Presentations

To end of M40 FitOptiVis has been promoted in following locations:

- Embedded World 2019 exhibition, Nuremberg D, 26 to 28 February 2019.
  At the TRENZ Electronics company booth, UTIA demonstrated FitOpttiVis results related to Dynamic HW Reconfiguration on Xilinx ZynqMP TE0820-03-3EG-1EA module.
- US west-coast tour
  - Workshop, Aug 19-22, 2019, California, US
  - The TUDelft was invited on a tour to the US west coast to present their work on the Fletcher open source FPGA interface, one of the main communication components of the FitOptiVis project. The tour included talks at University of Southern California, UC Riverside and Xilinx. Plans were made for future collaboration activities.
- OpenPOWER EU summit 2019
  - Workshop, Oct 30-31, 2019, Lyon, France
  - The TUDelft presented their FitOptiVis FPGA integration toolchain in the OpenPOWER summit in Lyon, France. The presentation attracted various participants from industry and academia, such as Xilinx, IBM, Molex, AlphaData, etc. The talk presented a number of next generation accelerated solutions for big data analytics and discussed the growing community effort to integrate these technologies into high performance computing systems. The talk was given during the OpenPOWER summit, where computing industry heavy-weights are collaborating to create new innovative systems to address the challenges we face with big data analytics at scale.
- EFECS event 2019
  - Workshop, Nov 19-21, 2019, Helsinki, Finland
  - The FitOptiVis project had a booth during the EFECS technology event in Helsinki, Finland. At the booth, the TUDelft presented a demonstrator of the hardware integration toolchain technology being developed in FitOptiVis. The toolchain allowed integration of a high-performance decompression and search pipeline on FPGA within days. The demo is able to search through the whole of a compressed version of wikipedia in

under 1 second. The event was attended by dozens of companies and academia interested in collaboration.

- Demo FitOptiVis Fletcher technology
  - Conference, Mar 9-13, 2020, Grenoble, France
  - Considered as the premier EDA event in Europe, DATE conference brings together major technology players together to present new innovations and discuss developments. TUDelft presented the FitOptiVis Fletcher demo in the exhibition of the conference. A video of the demo will be available on line on the website of the conference. The demo shows how Fletcher can be used to significantly reduce design time of complex FPGA HW systems.
- Demo FitOptiVis Jointer technology
  - Conference, Mar 9-13, 2020, Grenoble, France
  - Considered as the premier EDA event in Europe, DATE conference brings together major technology players together to present new innovations and discuss developments. UNISS, UNICA and UNIVAQ presented the FitOptiVis Jointer demo in the exhibition of the conference. A short video of the demo will be available on line on the website of the conference, but you can access the complete video at the following link: https://www.youtube.com/watch?v=w7EoDlxgzI0&t=107s. The video presents the demo and tutorial of JOINTER, a framework that allows to develop complex heterogeneous architectures composed of programmable processors and dedicated reconfigurable accelerators on FPGA, together with customizable monitoring systems, keeping under control the introduced overhead.
- The European anaesthesiology congress
  - Fair / Trade show, 1-3 June 2019, VIENNA, AUSTRIA
- American Society of Anesthesiologists (ASA)
  - Fair / Trade show, October 19, 2019 - October 23, 2019, Orlando, USA
- MEDICA
  - Fair / Trade show, 18-21 November 2019, Düsseldorf Germany
- Fpga Acceleration of Apache Spark Sql using Apache Arrow and Fletcher
  - DATE 2021 Conference, Feb 1-5, 2021, Online
  - Considered as the premier EDA event in Europe, DATE conference brings together major technology players together to present new innovations and discuss developments. TUDelft presented an end-to-end accelerated big data system based on the Fletcher technology developed in FitOptiVis. A description of the presentation is available online on the website of the conference https://past.date-conference.com/proceedings-archive/2021/html/ubooth.html. The system shows the advantage of using Fletcher to accelerate big data pipelines by more than 10x speedup.
- “JOINTER: Joining flexible monitors with heterogeneous architectures”
  - Invited Talk @ FPL 2020, given by F Palumbo, cooperation with Giacomo Valente (UNIVAQ), Carlo Sau (UNICA), Tiziana Fanni (UNISS), Francesco Di Battista (UNIVAQ), Tania di Mascio (UNIVAQ), Luigi Raffo (UNICA), Luigi Pomante (UNIVAQ)
  - DATE U-Booth 2021 cooperative presentation Giacomo Valente (UNIVAQ), Tiziana Fanni (UNISS), Carlo Sau (UNICA), Claudio Rubattu (UNICA), Francesca Palumbo (UNISS) and Luigi Pomante (UNIVAQ)

- "Dataflow-Based Toolchain for Adaptive Hardware Accelerators Deployment and Monitoring" tutorial given at the CPS&IoT'2021 Summer School on Cyber-Physical Systems and Internet-of-Things by Daniel Madronal Quintin (UNISS), Giacomo Valente (UNIVAQ), and Francesco Ratto (UNICA)

There has also been **10 educational events**, presented with more details in *D7.2 – Update of the Innovation, Standardization and Exploitation plan and report*, pp. 63-82 and in *D7.3 – Business Models and Final Innovation, Standardization and Exploitation plan and report.*

According to the Communication and Dissemination strategy we have been following, FitOptiVis project results have been submitted for publication in scientific journals, conferences, and workshops. The submission of papers jointly written by project participants has been actively encouraged. All of the partners have participated in the dissemination, with 116 entries in the publications list, 9 entries in the media list, and 9 entry in the events list.

Given the diversity of the topics and demonstrators addressed in FitOptiVis, a wide variety of national and international journals, conferences and workshops have been targeted to disseminate FitOptiVis results. The selection of a certain dissemination platforms has, apart from the topic, also depended on the timing. Not all conferences are held every year, and also the timing within the year may vary. A preliminary list of targeted journals and conferences was also included in Table 20 of the original project proposal. Updated lists are provided below.

Journals targeted by FitOptiVis included:

- ACM Transactions on Cyberphysical Systems (TCPS)
- ACM Transactions on Design Automation of Electronic Systems (TODAES)
- ACM Transactions on Embedded Computing Systems (TECS)
- ACM Transactions on Reconfigurable Technology and Systems (ACM)
- Discrete Event Dynamic Systems: Theory and Applications (DEDS)
- IEEE/ACM Transactions and Letters (Computer, Industrial Informatics, Embedded Systems, CAD, etc.)
- ACM Transactions on Reconfigurable Technology and Systems (TRETS)
- IEEE Micro
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Control Systems Technology (TCST)
- IEEE Transactions on Industrial Electronics (TIE)
- IEEE Transactions on Industrial Informatics
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Services Computing
- IEEE Journal of Selected Topics in Signal Processing
- IEEE Transactions on Signal and Information Processing over Networks
- IET Image Processing
- IET Signal Processing
- International Journal of Parallel Programming (Springer)
- Journal of Parallel and Distributed Computing (Elsevier)
- Journal of Real-Time Image Processing
- Journal of Signal Processing Systems (Springer)
- Transactions on Image Processing
- Pattern Recognition (Elsevier)

- Pattern Recognition Letters (Elsevier)
- Expert Systems with Applications (Elsevier)

Conferences targeted by FitOptiVis included (Some alterations happened due COVID-19 outbreak):

- AAL-IoT: EAI International Conference on Ambient Assisted Living Technologies based on Internet of Things.
- ACM/SIGDA International Symposium on Field-Programmable Gate Arrays (FPGA)
- Computational Color Imaging Workshop (CCIW)
- Cyber-Physical Systems week (CPS week)
- Design Automation Conference (DAC)
- Design and Automation and Test in Europe (DATE)
- Embedded Systems Week (ESWEEK)
- Euromicro Conference on Digital System Design (DSD)
- European Conference on Computer Vision Edinburgh, England, United Kingdom Aug 23 - Aug 28, 2020 (ECCV 2020).
- EUVIP 2019
- Field-Programmable Logic and Applications Conference
- Future Security Secure Research Conference.
- High Performance Computing (HPC)
- ICCASA: EAI International Conference on Context-Aware Systems and Applications.
- ICSP 2019: Industry Case Studies Program 2019 – Industry Day (ICSP 2019)
- ICT4AWE ICT for Ageing Well.
- IEEE Conference on Decision and Control (CDC)
- IEEE Conference on Emerging Technologies and Factory Automation (EFTA)
- IEEE International Conference on Image Processing
- IEEE Global Communications Conference
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications
- IEEE International Conference on Communications
- IFAC Conference on Programmable Devices and Embedded Systems (PDeS)
- IFAC Workshop on Discrete Event Systems (WODES)
- International Conference on Computer Vision 2020 (ICCVG 2020)
- International Conference on Field-Programmable Logic and Applications (FPL)
- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS)
- International Conference on Control, Decision and Information Technologies (CODIT)
- International Conference on Distributed Smart Cameras (ICDSC)
- International Conference on Signal and Image Processing (ICSIP)
- International Symposium on Low Power Electronics and Design (ISLPED)
- Mediterranean Conference on Control and Automation (MED)

With respect to the original plan we have also chosen the following additional targets, which have entered the preferred list of targets.

- 6th International Workshop on Requirements Engineering and Testing

- The 8th Mediterranean Conference on Embedded Computing - MECO'2019
- 12th European Conference on Software Architecture: Companion Proceedings (ECSA '18)
- 12th IEEE Conference on Software Testing, Validation and Verification (ICST)
- 16th ACM International Conference on Computing Frontiers
- 27th International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS)
- ACACES 2019 - Fifteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems
- ACM/IEEE International Symposium on Low Power Electronics and Design
- ACM International Conference on Computing Frontiers
- ACM Transactions on Graphics
- Applied Reconfigurable Computing (ARC 2019)
- Eurographics Symposium on Rendering
- IEEE Access
- IEEE Nordic Circuits and Systems Conference
- International Conference on Computer Graphics Theory and Applications
- International Conference on Field Programmable Logic and Applications (FPL)
- Intl. Conf. on Performance Engineering
- International Workshop on OpenCL, SYCL, Vulkan and SPIR-V
- International Workshop on OpenMP
- International Workshop on Software and Compilers for Embedded Systems
- Journal of Systems Architecture
- Sixth International Workshop on FPGAs for Software Programmers Euromicro Conference on Software Engineering and Advanced Applications (SEAA)w

4.2.3 Press Releases

Press releases were organized on an ad hoc base to disseminate special milestones and/or project results. Very often media coverage cannot be orchestrated, but rather “happens” as a result related dissemination activities. Such sporadic activities have not been tracked in detail.

4.2.4 Alignment with other European Projects

FitOptiVis project has aligned with other European projects to produce synergic advantages. Sharing of knowledge with other researchers is itself a value, but the efficiency gained by joint publishing, co-operation in research, and communication between the experts when solving complex problems is paramount when pursuing success in science and technology.

The use of virtual reality or augmented reality tools for safety applications is currently investigated in several EU-funded projects. In more details, *Immersafe* - Immersive Visual Technologies for Safety-Critical Applications is a four-year (2018-2021) H2020 Marie Sklodowska-Curie Innovative Training Network that brings together 9 beneficiaries and 5 partner organizations from Finland, Sweden, Norway, Croatia, Italy, and Switzerland. The aim of the project is the training of a new generation of multi-disciplinary experts, who understand the core imaging technologies, the requirements set to them by the safety-critical applications and who can account for the human user

in the design of such systems. In fact, in many contexts – heavy work machines, emergency response, control centres – human operators face complex and demanding situations where their decisions can have far-reaching consequences on productivity, environment, and even human lives. To provide to the operator situational awareness, which can be achieved by sensing relevant visual data about the operating environment, Immersive Visual Technologies can be used for providing ultra-realistic and interactive visual experience.

Elements of the monitoring solution using video analytics in use case UC3 Habit Tracking are being co-designed with similar results in ECSEL project *AFarCloud* in their use case for animal grazing monitoring [1]. Despite the different target (in AFarCloud we're targeting the monitoring of animals in farms where in FitOptiVis it is humans at their homes) the rough set-up is similar: fixed cameras capture and stream video that is analysed upstream at edge or cloud nodes to extract behaviour of the subjects and understand their actions (e.g., patterns, outliers, etc.). Thus, some elements can be shared among the projects. Specifically, we are sharing the capture hardware (FOSCAM FI9900EP infrared cameras [2]) for limited experiments in the baseline deployment for UC3 Habit Tracking. Since the timeline of AFarCloud and FitOptiVis is very aligned (both correspond to the same ECSEL call) and there are a number of shared partners (e.g., HIB for UC3, but also UNIVAQ) it is expected that joint work may be done together in terms of dissemination and that FitOptiVis technology approaches can be tested there.

EMC² – 'Embedded Multi-Core systems for Mixed Criticality applications in dynamic and changeable real-time environments' is an ARTEMIS Joint Undertaking project in the Innovation Pilot Programme 'Computing platforms for embedded systems' (AIPP5). Embedded systems are the key innovation driver to improve almost all mechatronic products with cheaper and even new functionalities. They support today's information society as inter-system communication enabler. A major industrial challenge arises from the need to face cost efficient integration of different applications with different levels of safety and security on a single computing platform in an open context. ITI participated in this recently finished project by developing enhanced 3D Industrial inspection system features and applying them in an innovative pilot. All these developments have influenced the work carried out in FitOptiVis.

H2020 *ZDMP* (Zero Defect Manufacturing Platform) is a European project which main aim is to establish a digital platform for connected smart factories for achieving excellence in manufacturing through zero-defect processes and products. The project started in January 2019 and it will last a total of four years. ITI forms part of the consortium as technical manager and plans to integrate its 3D Industrial Inspection system in the project portfolio solutions, it will count on the enhancements achieved within FitOptiVis project.

CERBERO [3] is a completed (Feb. 2020) H2020 project. It aimed at providing a model-based methodology and toolset for design, incremental prototyping, verification and continuous developments of adaptive CPS. Run-time CPS management has been enabled leveraging on strategies for system-in-the loop co-simulation, continuous monitoring, optimization and system reconfiguration to provide high (optimal) performance, while being reactive to users' needs and changed environmental conditions. UNISS, UNICA, and ABI were involved in CERBERO. The cross-connections that have been established with CERBERO were quite strong. Indeed, both MDC and the SAGE suite that are in use also within FitOptiVis have been originally used

and developed there. Numerous, tutorials on this technologies have already been organized (CPS Summer School 2017, 2018 and 2019 editions, CPS&IoT Summer School 2019, DATE U-Booth 2019) and were planned also in 2020 (CPS Summer School 2020, CPS&IoT Summer School 2020, DATE U-Booth 2020) involving FitOptiVis extensions to those tools and project partners (i.e. UNIVAQ).

NextPerception [4] is a running (2020-2023) ECSEL project whose aim is develop next generation smart perception sensors and enhance the distributed intelligence paradigm to build versatile, secure, reliable, and proactive human monitoring solutions for the health, wellbeing, and automotive domains. FitOptiVis partners such as HIB, 7SOLS and BUT are present and they are extending the technology basis produced in FitOptiVis to better address the project's specific objectives such as Explainable AI, distributed AI and the usage of heterogeneous and unobtrusive sensors for person monitoring. Results from WP4 and WP5 have found its way into the first demonstrators of the project.

4.2.5 Education and Innovation

Educating young scientists and involving them in innovation has been an important aspect of the FitOptiVis project. Young scientists have been invited to apply for positions at various levels and to learn about the concept while at the same time, in so far it has been possible, the demonstrator products have been presented. Also in university courses the concepts of the project have been discussed while the platform technologies were explained.

For example, University of Granada has included FitOptiVis methodology and objectives as part of their Master´s degree curriculum. Master students have studied the consortium work during the classes for a course on Advanced Architectures for Vision Processing (4 ECTS), within the Master in Big Data and Computer Engineering [5]. Additionally, it has been the topic for two master´s final project on video-surveillance applications and for the monitoring of the elderly at home.

We have created the following training activities:

Educational Activity Topic	HIB	UTU	UC	UGR	7SOLS	TUE	BUT	TUT	UTIA	Activity Summary
Internal events	1		2			1	2			**6**
External events						4				**4**
Bachelor Thesis			2	2		2	2			**8**
Master Thesis	1	3	3	3			1	11		**22**
PhD Students		2	1	4		4	2	4	1	**18**
Professional Doctorate Students						1				**1**
Usage of FitOptiVis results within Courses		2	1	3	1	2	2	2		**13**
Exchange Periods				1		1		1		**3**

Figure 7, Educational activities

More information on educational activities is available in *D7.2 – Update of the Innovation, Standardization and Exploitation plan and report,* pp. 63-82 and in *D7.3 – Business Models and Final Innovation, Standardization and Exploitation plan and report.*

4.2.6 End User Board (EUB)

The First End-User Workshop was organised in Eindhoven on 10 September 2019. This workshop was the first one of a series of three that took place during the project. During the workshop, discussions took place among the EUB members and FitOptiVis' participants. The discussions were guided in accordance with the points included in a questionnaire that was created by the FitOptiVis management board and the use case leaders and that was distributed to the EUB members beforehand. In general, all the EUB members agreed to the importance of FitOptiVis technologies and you may find details about the feedback in *D8.4 First End-User Workshop*.

The second EUB workshop took place virtually on 20 October 2020 due to pandemic emergency situation. Given its the virtual character, it was decided to create an online questionnaire that contains most of the information presented during the virtual meeting, in the form of including recording videos from the partial demonstrators. The feedback was used to improve the exploitation potential of FitOptiVis solutions leading to partial demonstrators aligned with real market needs. The feedback was generally positive and confirmed the exploitation possibilities of FitOptiVis proposed solutions in all the use cases. Details can be found in *D8.6 Second End-User Workshop*.

The third and final EUB has not taken place at the time of writing, but it will take place in September 2021, and focus on final demonstrators. The details will be available in *D8.7 Last project event and End-User Workshop*.

4.2.7 Special Issue

The FitOptiVis partners made agreements with the Springer Journal of Signal Processing Systems to publish a special issue journal documenting the technological developments and results of the FitOptiVis project. The partners have submitted 10 manuscripts based on results from the project covering both industrial as well as academic output and originating from all countries participating in the project. In addition, a number of papers describe industry-academia collaborations and results. The papers are now under review and the partners expect to publish the special edition by the beginning of 2022.

5 EXECUTIVE SUMMARY

The Initial Dissemination Plan outlined the general principles applicable to the project communication as well as the different methods that have been put in place to:

- Facilitate the sharing of knowledge within the project consortium for optimal project management.
- Promote the project's research and outcomes to the identified target groups to guarantee the long-term success and sustainability of the project.

The sharing of knowledge within the consortium was mainly done through the Management Board meetings and Workshops. During these meetings partners told about their results and aligned the activities for the next period. So far 34 Management Board meetings and 12 Workshops have been held. The Workshops were hosted by different partners in different countries (2 in Netherlands, 1 in Italy, 1 in Finland, 2 in Czech Republic and 1 in Spain). After spring 2020 the workshops have been virtual, due to restrictions caused by the COVID-19 outbreak. In total 5 virtual have been organized. FitOptiVis had 14 academic and research partners, all of them with strong background and curricula. We have produced a total of 116 publications, which comes to 33.1 per year, more than our goal of 20. Project website has reached 391 unique users, 1575 unique visits and 4806 page views during the period from 16th of May 2020 to 15th of May 2021.

Finally, an efficient file sharing system has been used to exchange documents, files, presentations etc. The system performed version control for safety and ease of operation. The system has been hosted by BUT. The details of publications and other presentations generated by the project have been collected in the database, which has been hosted by UTU. The same system is used to collect partner descriptions and personnel information for project internal use.

The communication to the target groups outside the consortium has been mainly done through conferences, scientific journals, symposia, press releases and educational activities. List of publications is provided (see Annex 6.2).

6 References

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7 ANNEXES

7.1 Annex I: Project poster

FITOPTIVIS

ECSEL JU

From the cloud to the edge - smart IntegraTion and OPtimisation Technologies for highly efficient Image and VIdeo processing Systems

Objectives

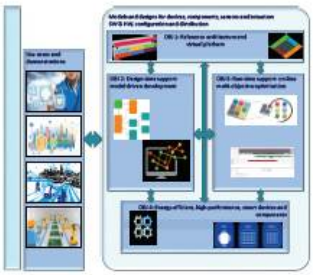
FitOptiVis addresses CPS with distributed actuators and image and video sensors. Real-time image- and video-processing pipelines are a prime source for environmental information and feedback. FitOptiVis applies advanced imaging and video applications, combining multiple heterogeneous sensor inputs. It balances power demand versus image and video performance.

Use cases

- Water supply
- Virtual reality
- Habit tracking
- 3D Industrial inspection
- Road traffic surveillance
- Multi source medical imaging composition
- Sustainable safe MRI
- Robot calibration
- Smart grid infrastructure surveillance
- Autonomous exploration

Results

Reference architecture
Design portability
On-line multi-objective quality and resource management
Energy-efficient, high-performance, smart devices and components



Essential Technologies

- Smart System Integration
- Cyber Physical Systems
- Design Technology

Key application domains

- Smart health
- Smart Society
- Smart Production
- Smart Mobility

Spain
HI IBERIA
INSTITUTO TECNOLÓGICO DE INFORMÁTICA
RGB
SEVEN SOLUTIONS
SCHNEIDER ELECTRIC ESPAÑA S.A.
THALES ALENIA SPACE
UNIVERSITY CANTABRIA
UNIVERSITY GRANADA

Netherlands
PHILIPS HEALTHCARE
FUTURA
TU DELFT
TU EINDHOVEN

Czech Republic
CAMEA
CHARLES UNIVERSITY
REX

BRNO UNIVERSITY OF TECHNOLOGY
UNIVERSITY WEST BOHEMIA USTAV TEORIE INFOR-
MACE A AUTOMATIZACE AV CR, VVI.

Italy
ABINSULA
AITEK
SOCIETÀ ACQUEDOTTI TIRRENI
BITTREE SRL
ISARAIL
UNIVERSITÀ DEGLI STUDI DI CAGLIARI
UNIVERSITÀ DEGLI STUDI DI SASSARI
UNIVERSITÀ DEGLI STUDI DELL'AQUILA

Finland
HURUA SOLUTIONS OY THALES ITALIA - AIR OPERATIONS
NOKIA TECHNOLOGIES OY
TAMPERE UNIVERSITY OF TECHNOLOGY
UNIVERSITY TURKU
VISIDON OY

FITOPTIVIS

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Start 1-6-2018
Duration 36

Total investment
€M 2.5

Participating organisations
30

Number of countries
9

7.2 Annex II: Papers/Conferences/Workshops/etc.

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68. "Performance of Texture Compression Algorithms in Low-Latency Computer Vision Tasks", Jakub Zadnik, Markku Mäkitalo, Jussi Iho, Pekka Jääskeläinen, In: European Workshop on Visual Information Processing, 2021

69. "A Deployment Framework for Quality-Sensitive Applications in Resource-Constrained Dynamic Environments", Tabatabaei Nikkhah, Shayan; Geilen, Marc; Goswami, Dip; Koedam, Martijn; Nelson, Andrew; Goossens, Kees, In: Euromicro Conference on Digital System Design (DSD), 2021

70. "Unified OpenCL Integration Methodology for FPGA Designs", Topi Leppänen, Panagiotis Mousouliotis, Georgios Keramidas, Joonas Multanen, Pekka Jääskeläinen, In: IEEE Nordic Circuits and Systems Conference, 2021

71. "Self-adaptive K8S Cloud Controller for Time-sensitive Applications", Lubomír Bulej, Tomáš Bureš, Petr Hnětynka, Danylo Khalyeyev, In: Euromicro Conference on Software Engineering and Advanced Applications (SEAA), Palermo, Italy, 2021

72. "FOTV: A Generic Device Offloading Framework for OpenMP", J.L. Vazquez and P. Sanchez, In: OpenMP: Enabling Massive Node-Level Parallelism - Proc. of IWOMP 2021, 2021

73. "Runtime reconfigurable system for decommissioned satellite identification and capture", R.De Esteban, F. Manteca, M. Martinez and P. Sanchez, In: DCIS 2021, 2020

74. "Automated requirements-based testing of black-box reactive systems", Massimo Narizzano, Luca Pulina, Armando Tacchella, Simone Vuotto, In: NASA Formal Methods Symposium, 2020

75. "RF Synchronized Active LED Markers for Reliable Motion Capture", R. Čečil, D. Tolar, M. Schlegel, In: International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME 2021), 2021

76. "QRD RLS Algorithm for Hand Gesture Recognition Applications", Likhonina Raissa, In: International Conference on Systems, Signals and Image Processing 2019 (IWSSIP 2019), 2019

Chapter in a Book:

77. "Reconfigurable and approximate computing for video coding", Francesca Palumbo, Carlo Sau, In: VLSI Architectures for Future Video Coding, 2019

Thesis/Dissertation:

78. "Methods for Efficient Integration of FPGA Accelerators with Big Data Systems", J.W. Peltenburg, In: , 2020

79. "Radar Signal Processing and Fusion of Information", Reich Bořek, In: Brno University of Technology, 2020

80. "Classification of Varying-Size Plankton Images with Convolutional Neural Network", Bureš Jaroslav, In: Brno University of Technology, 2020

81. "Ensuring Precision of Stereo Image Processing", Kuník Oliver , In: Brno University of Technology, 2021

82. "Hardware acceleration of object detection in images", Petr Musil, In: Brno University of Technology, 2021

83. "Ghost-free HDR video using FPGA", Martin Musil, In: Brno University of Technology, 2021

84. "Diseño de un sistema de reconocimiento automático de comportamientos humanos basado en vídeo mediante redes neuronales recurrentes / Design of human activity recognition engine based on video analisis with Recurrent Neural Networks", Javier W. Ortiz Canepa, In: , 2021

Other:

85. "Demo poster paper - AN AUTONOMIC MANAGER FOR EDGE-COMPUTING PLATFORMS", Gabriella D'Andrea, Tania Di Mascio, Luigi Pomante and Giacomo Valente, In: Conference on Design and Test Automation in Europe (DATE) – University Booth, 2019

86. "Design Time and Run Time Resources for the ZynqBerry Board TE0726-03M with SDSoC 2018.2 Support ", Jiri Kadlec, Zdenek Pohl, Lukas Kohout, In: UTIA in FitOptiVis, 2019

87. "Design Time and Run Time Resources for Zynq Ultrascale+ TE0808-04-15EG-1EE with SDSoC 2018.2 Support", Jiři Kadlec, Zdeněk Pohl, Lukáš Kohout, In: UTIA in FitOptiVis, 2019

88. "Design Time and Run Time Resources for Zynq Ultrascale+ TE0820-03-4EV-1E with SDSoC 2018.2 Support", Jiři Kadlec, Zdeněk Pohl, Lukáš Kohout, In: UTIA in FitOptiVis, 2019

89. "Video Input/Output IP Cores for TE0820 SoM with TE0701 Carrier and and Avnet HDMI Input/Output FMC Module", Lukas Kohout, Jiri Kadlec, Zdenek Pohl, In: UTIA in FitOptiVis, 2019

90. "Video Input/Output IP Cores for Xilinx ZCU102 with Avnet HDMI Input/Output FMC Module", Lukas Kohout, Jiri Kadlec, Zdenek Pohl, In: UTIA in FitOptiVis, 2019

91. "Stereo Demo", Zdenek Pohl, Lukas Kohout, Jiri Kadlec, In: UTIA in FitOptiVis, 2018

92. "Live Canny Edge Detection Demo for TE0808+TEBF0808 Trenz Board", Zdenek Pohl, Lukas Kohout, Jiri Kadlec, In: UTIA in FitOptiVis, 2018

93. "HDR Tonemapping demo", Martin Musil, Svetozar Nosko, In: Brno University of Technology, 2019

94. "HDR deghosting demo", Martin Musil, Petr Musil, In: Brno University of Technology, 2019

95. "FPGA object detection demo", Petr Musil, Roman Juranek, In: Brno University of Technology, 2019

96. "Demo poster Paper - HEPSYCODE-MC: ELECTRONIC SYSTEM-LEVEL METHODOLOGY FOR HW/SW CO-DESIGN OF MIXED-CRITICALITY EMBEDDED SYSTEMS", Luigi Pomante, Vittoriano Muttillo, Marco Santic and Emilio Incerto, In: Conference on Design and Test Automation in Europe (DATE) – University Booth, 2019

97. "Ph.D. forum paper - ESL HW/SW Co-Design Methodology for Mixed-Criticality and Real-Time Embedded Systems", Vittoriano Muttillo, In: Conference on Design and Test Automation in Europe (DATE) – Ph.D. Forum, 2019

98. "Demo Presentation - Tutorial HEPSYCODE PhD Course ", Vittoriano Muttillo, Luigi Pomante, In: Seminar at Università degli Studi dell'Aquila, 2019

99. "Demo poster paper - MECO AN INNOVATIVE RUN-TIME MANAGER TO EVALUATE THE DYNAMIC PARTIAL RECONFIGURATION PROFITABILITY", Gabriella D'Andrea, Tania Di Mascio, Luigi Pomante and Giacomo Valente, In: ACACES 2019 - Fifteenth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems, 2019

100. "Demo poster paper - MECO AN INNOVATIVE RUN-TIME MANAGER TO EVALUATE THE DYNAMIC PARTIAL RECONFIGURATION PROFITABILITY", Gabriella D'Andrea, In: CWWMCA19 - Career Workshop for Women & Minorities in Computer Architecture , 2019

101. "Demo Presentation - Design space exploration for hypervisor-based mixed-criticality systems", V. Muttillo, L. Pomante, In: CPS&IoT'2019 Summer School on Cyber-Physical Systems and Internet-of-Things, 2019

102. "Demo poster paper - JOINTER JOining flexIble moNitors wiTh hEterogeneous architectuRes", G. Valente, T. Fanni, C. Sau, C. Rubattu, F. Palumbo, L. Pomante, In: DATE2020 Design, Automation and Test in Europe Conference, 2020

103. "Programmable Dictionary Code Compression for Instruction Stream Energy Efficiency", Joonas Multanen, Kari Hepola, Pekka Jääskeläinen, In: IEEE International Conference on Computer Design , 2020

104. "PoCL-R: A Scalable Low Latency Distributed OpenCL Runtime", Jan Solanti, Michal Babej, Julius Ikkala, Vinod Kumar Malamal Vadakital, Pekka Jääskeläinen, In: Embedded Computer Systems: Architectures, MOdeling, and Simulation, 2021

105. "DDISH-GI: Dynamic Distributed Spherical Harmonics Global Illumination", Julius Ikkala, Petrus Kivi, Joel Alanko, Markku Mäkitalo and Pekka Jääskeläinen, In: Computer Graphics International (CGI), 2021

106. "Design and management of image processing pipelines within CPS: 2 years of experience from the FitOptiVis ECSEL Project", Luigi Pomante, Francesca Palumbo, Claudia Rinaldi, Giacomo Valente, Carlo Sau, Tiziana Fanni, Frank van der Linden, Twan Basten, Marc Geilen, Geran Peeren, Jiří Kadlec, Pekka Jääskeläinen, Marcos Martinez, Jukka Saarinen, Tero Säntti, Maria Katiuscia Zedda, Victor Sanchez, Dip Goswami, Zaid Al-Ars, Ad de Beer, In: 2020 23rd Euromicro Conference on Digital System Design (DSD), 0

107. "Performing Electromagnetic Side-channel Attack On A Commercial AES-256 Device", Mika Kaustinen, Ohto Myllynen, Tero Jokela, Lauri Koskinen, Olli Heimo and Tero Säntti, In: Technical Report, University of Turku, 2021

108. "Two serial connected evaluation versions of FP03x8 accelerators for TE0820-03-4EV-1E module on TE0701-06 carrier board", Kadlec Jiri, Pohl Zdenek, Kohout Lukas, In: , 2019

109. "FP01x8 Accelerator on TE0726-03M", Kadlec Jiri, Pohl Zdenek, Kohout Lukas, In: , 2019

110. "DTRiMC tool for TE0808-09-EG-ES1 module on TEBF0808 carrier board", Kadlec Jiri, Likhonina Raissa, In: , 2021

111. "DTRiMC tool for TE0726-03M board", Kadlec Jiri, Likhonina Raissa, In: , 2021

112. "DTRiMC tool for TE0808-15-EG-1EE module on TEBF0808 carrier board ", Kadlec Jiri, Pohl Zdenek, Kohout Lukas, In: , 2021

113. "DTRiMC tool for TE0820-02-3CG-1E module on TE0701-06 carrier board ", Kadlec Jiri, Pohl Zdenek, Kohout Lukas, In: , 2021

114. "DTRiMC tool for TE0820-03-4EV-1E module on TE0701-06 carrier board ", Kadlec Jiri, Pohl Zdenek, Kohout Lukas, In: , 2021

115. "Eight FP03x8 accelerators for TE0808-09-EG-ES1 module on TEBF0808 carrier board", Kadlec Jiri, In: , 2021

116. "Data Movers in DTRiMC tool for TE0726 03M 07S board", Kadlec Jiri, Pohl Zdenek, Kohout Lukas, Likhonina Raissa, In: , 2021

7.3 Annex III: Press Releases and Public Announcements

The Fletcher framework developed in FitOptiVis was even mentioned in an article on the popular technology magazine ZDNet (https://www.zdnet.com/article/apache-arrow-the-little-data-accelerator-that-could/).

The Finnish consortium, led by UTU, issued a press release on 12.10.2021. It is in Finnish, and was released via Business Finland, who is handling the national part of the funding. The press release covered the major achievements from all 5 partners in Finland, and also a brief intro to the project over all.

7.4 Annex IV: Publication Statistics

This Annex lists statistics from the project internal database.

Total publications: **116**

Breakdown by type:
Article in Journal: **26**
Publication in Conference proceedings/Workshop: **50**
Chapter in a Book: **1**
Other: **32**
Thesis/Dissertation: **7**

Breakdown by year:
unknown: 4
2018: 4
2019: 41
2020: 31
2021: 36

Breakdown by Open Access status:
No: 39
Green: 53
Gold: 24

Breakdown of "No Open Access" by partner:
TUD: 4
BUT: 9
UTIA: 17
TUT: 1
HIB: 1
UC: 1
UGR: 1
UNISS: 2
UNIVAQ: 3

Publications without Open Access link: 41

Breakdown by partner:
CUNI: 1
BUT: 9
UTIA: 17
TUT: 6
UTU: 1
HIB: 1
ITI: 2
UC: 1
UGR: 1
UNISS: 2