Pilot Test and Field Trial Planning

	Schedule	Learners	Training delivery methods	Evaluation Instruments	Evaluation criteria	Assessment personnel	Reporting methods
Pilot test	2 January – 30 April 2018	Minimum 10 trainees participating country	On-line courses in mClouds	Questionnaires on usability of the e-learning materials and feasibility of mClouds	Minimum 50% of the participants in the pilot tests with positive attitudes to the courses	Working Group on evaluation including one representative from each country	Oral reports at all PSC meetings Pilot test report
Field trial	1 May – 24 December 2018	Minimum 30 students per HEI and 20 trainees per course	On-line courses Shared CAD system and IT hardware resources	Knowledge tests Questionnaires on usability of the e-learning materials and on learning attitudes Interviews	Minimum 240 trainees. Minimum 50% of the participants in the pilot tests with positive attitudes to mClouds; Minimum 50% of the participants in the tests considering that the courses will provide them better opportunity for employment.	Working Group on evaluation including one representative from each country. External evaluator.	A written report of the assessment results from the pilot test, an evaluation report from the external evaluator.

Knowledge tests: The evaluation questions will be whether the trainees reach their performance objectives (specifying what the trainees must do after the course) and the learning objectives (specifying what the trainees must learn during the course)? I.e. are the learning outcomes attained as defined in the qualification?

Usability questionnaire: Is the delivery environment, using Cloud technology, really increasing the accessibility of course materials and flexibility of delivery for the users? Does the learning environment and the course modules reach the usability criteria and satisfy users' needs in carrying out their specific tasks?

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Plan for the Field Trial
02 May 2018- 24 December 2018

Partner's name/abbreviation	Plan for the pilot test	Plan for sharing resources and free software	Number. of students (minimum 30 per HEI)
P1. TUS	Projects for design of ICs and analysis of bio-nanomaterials using also the courses provided by the business partners, eventually in collaboration with students from other partner universities Projects from the enterprises in microelectronics All three courses on project management, communication and entrepreneurship by TUB will be provided as electives to the MSc students	Microwind of INSA-Toulouse if available. If not - remote access to Cadence at TUS The course developed by AMG-technology "Design, Prototype Fabrication and Challenging Applications of Silicon Microsystems with Piezoresistive Feedback"	42
P2. INSA-Toulouse	Run the EMC of ICs course, Master year 2 level, 3 full days, morning courses & afternoon practical projects using IC-EMC.	IC-EMC freeware available from www.ic-emc.org and from INSA mCloud	20
	Prototype the nano-CMOS course through dedicated afternoons, students from 4th year in extended project, as well as two professors who want to upgrade in FinFET/nano-CMOS design	Microwind software available from INSA mCloud. More info on www.microwind.org	15 + 2 professors
	Prototype EMC of ICs or nano-CMOS course with P4.UNED students in Feb/March 2018.	Microwind and/or IC-EMC	5-10

P3. Polito	Contacts with UNED for a Pilot at their University Field trial of courses (mostly the ones about MEMS) of other partners done by Polito students	TAMTAMS https://tamtams.vlsilab.polito.it/login.php Passwords sent to all the partners.	200
P4. UNED	UNED subjects are delivered in the second semester (from March to June) in the Master of Information and Communication Electronic Systems. Students who participate in this master will complete these two courses, with all the activities included in them. Being a fundamental part, the development of all microelectronics exercises with virtual and remote laboratories (VISIR).	All courses are offered free of charge to other partners and people interested in microelectronics. The use of remote laboratories is managed by a booking system based simply on the availability of the hardware and the number of users online simultaneously.	30
P5. UKIM	One semester projects and final project work on: MEMS Sensors and Actuators and Semiconductor Device Modeling	Microwind software available from INSA mCloud. Remote access to Cadence at TUS	30
P9. CETTI	Small and medium complexity electronic projects, configured for understanding the design of electronic modules, will be delivered to B.Sc. and M.Sc. students, the best 20 projects being selected for the MECA project. The CETTI courses subjects are delivered in the 2nd semester of the academic year (the spring semester) in the frame of the “Interconnection Technologies in Electronics” discipline, between February and June. The discipline is delivered to	The following freeware CAD tool (with its palette accessories) was deeply investigated by UPB-CETTI: Cadence OrCAD 16.6-2015 Lite, an advanced CAE-CAD-CAM electronic design automation software system, widely used in the global electronics industry.	45

	approx. 100 B.Sc. students and 30 M.Sc. students. During the semester, the small and medium complexity electronic projects will be developed by students and evaluated by the CETTI professors.		
Giga Electronic International	The training modules developed by UPB-CETTI and other training modules created by various MECA partners will be used by Giga Electronic International to train its staff in the field of electronics and microelectronics. Additionally, UPB-CETTI, based on official collaboration contracts, will offer to the industrial partners the training modules developed within the Politehnica University of Bucharest.	Cadence OrCAD 16.6-2015 Lite, an advanced CAE-CAD-CAM electronic design automation software system, widely used in the global electronics industry.	5
P13. BME	The proposal for the pilot test is the following from BME ETT: **Sensors: Principles and Technologies (VIETMA02)** is a subject during secondary specialization (Applied Sensorics) for MSc students at the Department of Electronics Technology. The subject usually has **10-20 students at the spring semester** between February and June. During the semester, the modules will be evaluated by the students directly via a form. Also the students will have an assessment based on the open education modules.	The following free, sharable CAD and related software tools were overviewed by BME-ETT. They are recommended for sharing, and they also will be installed into the MECA BME-VM test template. MECA account was registered for three free **CAD software tools from RS Company** in electrical and PCB design. 1) DesignSpark Electrical https://www.rs-online.com/designspark/electrical-download-and-installation 2) DesignSpark PCB	45

	The training modules will be used by the **UniPCB Kft.** and **EFI-Labs Kft.** to train their own respective workers with the respective modules. Colleagues from the SMEs will be involved to the teaching at BME to introduce the modules to the students in their respective topics.	https://www.rs-online.com/designspark/pcb-download-and-installation 3) DesignSpark Mechanical https://www.rs-online.com/designspark/mechanical-download-and-installation **Further tools:** 4) KiCAD http://kicad-pcb.org/download/ 5) LTspice from Linear Technologies http://ltspice.linear-tech.com/software/LTspiceXVII.exe 6) Inkscape for editing vectorgraphic illustrations https://inkscape.org/en/release/ 7) GIMP for editing bitmap images https://www.gimp.org/downloads/	
P14. TUB	Students in physics and nanomaterials will follow the course “Superconductive Materials” – 15 students During the summer semester the courses on soft skills will be followed by all 4th year: BSc students Effective Communication with Groups, Presentation Techniques Project Management for the 21st Century The Importance of Soft Skills at the Labour Market	TAMTAMS https://tamtams.vlsilab.polito.it/login.php	45