Development of Embedded System Courses with implementation of Innovative Virtual approaches for integration of Research, Education and Production in UA, GE, AM

Co-funded by the Tempus Programme of the European Union

PROGRESS MEETING 1

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- Agenda
  - Intermediate Report & Feedback
  - Past & Planned actions
    - Work packages
  - Final Conference
  - Budget overview
  - Extension of project
  - Practical things
    - New conversion table + new logo

INTERMEDIATE REPORT

Co-funded by the Tempus Programme of the European Union

- Overall very positive feedback
  - Congratulations on the results
  - Field monitoring's were good + ample information
  - According to plans, good communication, procedures, agreements, quality assurance
  - Analysis of competences needed, development of relevant courses, staff training activities
  - Strong links with industry, external partners
  - Plans for cooperation after the project & credit mobility

INTERMEDIATE REPORT

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- Remarks
  - Delivery of equipment
  - Continue to publish on the website
    - Results of surveys on website
  - More training in GE and AM
    - Is this a problem of not done or not counted?

INTERMEDIATE REPORT

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- Remarks
  - Example at ZNTU

INTERMEDIATE REPORT

Co-funded by the
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of the European Union

- Remarks
  - Example at ZNTU

INTERMEDIATE REPORT

Co-funded by the
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of the European Union

- Remarks
  - Example at ZNTU

INTERMEDIATE REPORT

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- Remarks
  - Ukraine
    - In line with the new Law on High Education
    - Check: http://erasmusplus.org.ua/erasmus/ka3-pidtrymka-reform/natsionalna-komanda-ekspertiv-here/materiali-here.html
    - 5th Channel "Window to Europe"
    - Ministry of Education and Science website
    - Higher Education Portal (http://vnz.org.ua) + others
  - Georgia
    - Joint Master program GTU-TSU
    - Preparation for program accreditation

WP1

Co-funded by the Tempus Programme of the European Union

- Analysis of the current situation in target HEIs
- Questionnaires
- Requirements for stakeholders in embedded systems engineering in TC and EEA (European Economic Area)
- Recommendations on competences needed
- External stakeholders
- Agreement between HEIs for upgrading of the curricula

WP1

Co-funded by the Tempus Programme of the European Union

- Status
  - Finalized
    - => Informational bulletin by Galina
    - Action needed
      - » Finalizing and publication on the website
      - » UKF?

WP2

Co-funded by the
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of the European Union

- Develop relevant course material on different topics in embedded systems engineering

WP2

Co-funded by the Tempus Programme of the European Union

- 1 Module “Hardware for Embedded Systems”: 150h (5 ECTS) + 120h (4 ECTS) practical exercises with new equipment:
  - Microcontrollers (2 ECTS) 60h: IUT;
  - Digital Electronics (2 ECTS) 60h: IUT;
  - Digital System Design (2 ECTS) 60h: IUT;
  - Embedded Communication (2 ECTS) 60h: TMM;
  - Sensors, Actuators and Interfacing (1 ECTS) 30h: IUT

WP2

Co-funded by the Tempus Programme of the European Union

- 2 Module “Software for Embedded Systems”: 180h (6 ECTS) + 150h (5 ECTS) practical exercises with new equipment:
  - C for Embedded Systems (3 ECTS) 90h: TMM;
  - Embedded Software Development (3 ECTS) 90h: TMM;
  - Embedded Operating Systems (3 ECTS) 90h: TMM;
  - Multicore Programming (2 ECTS) 60h (MA): TMM;

WP2

Co-funded by the Tempus Programme of the European Union

- 3 Module „CAD/CAM/CAE for Embedded Systems”: 90h (3 ECTS) + 90h (3 ECTS) practical exercises with new equipment:
  - ECAD electronic design, ALTIUM, (3 ECTS): TMM;
  - MCAD structural design, Pro Engineer/CREO, (3 ECTS): TMM - KUL.

WP2

Co-funded by the Tempus Programme of the European Union

- Six Courses:
  - Digital Signal Processing: (3 ECTS) 90h : TMM
  - Remote Labs and Virtualization: (3 ECTS) 90h + (2 ECTS) 60h practical exercises in the remote labs: IUT

WP2

Co-funded by the Tempus Programme of the European Union

- Six Courses:
  - Quality Engineering: 36 h (1, 5 ECTS) + 24 h (1 ECTS) practical exercises: UKF
    - Quality management incl. ISO 9000 family, 18 h (MA);
    - Quality Engineering, 18 h + 18 h practice (MA).
  - New teaching approaches in Engineering: 36h (1,5 ECTS): UKF
  - Soft Skills for engineers: 36h (1,5 ECTS): UKF
  - Learning Management: 48h (2 ECTS): UKF

WP2

Co-funded by the Tempus Programme of the European Union

- Status
  - Template
  - Syllabi
  - Courses
    - UKF: finished & published
    - TMMA: finished but one & published
    - IUT: ???

⇒All need material needs time to work into = WP5!

⇒Stay ahead of your students – plan some time – let students help

WP2

Co-funded by the Tempus Programme of the European Union

- Status
  - Actions needed
    - Work with course material for target partners, produce results, show results
    - IUT: finalize courses for website
    - TMM: finalize course Embedded SW
    - All partners: send syllabi

WP3

Co-funded by the Tempus Programme of the European Union

- Implementing a (virtual) learning environment in ESD engineering
  - remote lab and virtualization: REAL
    - plan, coordinate and implement a virtual learning environment
    - efficient and effective implementation
  - every target HEI: a remote lab
  - sustainable
    - expansion & adaption

WP3

Co-funded by the Tempus Programme of the European Union

- Implementing a (virtual) learning environment in ESD eng
  - embedded systems design labs: ESDL
    - plan, coordinate and implement embedded systems lab infrastructure
    - practice oriented competences
  - every target HEI: lab infrastructure

WP3

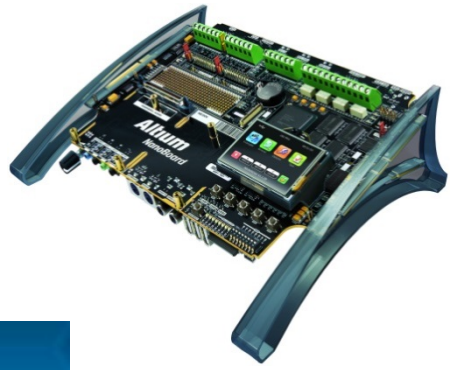
Co-funded by the Tempus Programme of the European Union

- Implementing a (virtual) learning environment in ESD engineering
  - LMS (learning management system) – Wiki
    - open source
    - good practices list

WP3

- Status
  - Altium: 20 licences, on-demand
    - Is this possible everywhere?
    - Demo on live.altium.com: users
  - 1 Nanoboard as a gift from Altium
  - Creo Wild Fire
    - All delivered

Altium

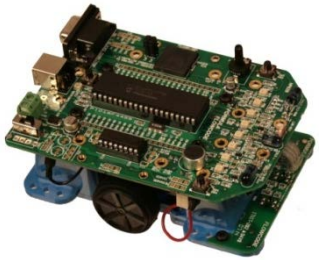


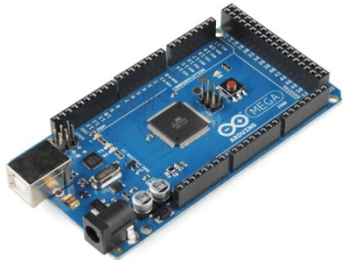
PTC® Creo® Parametric™ Academic Edition

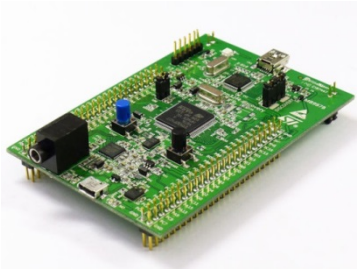
WP3

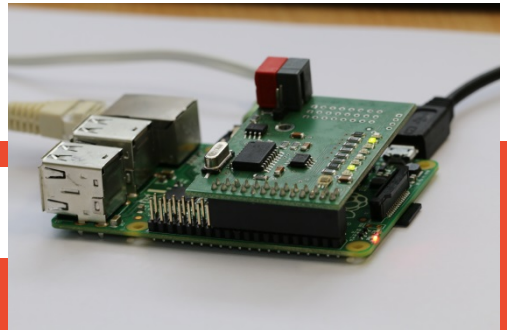
Co-funded by the Tempus Programme of the European Union

- Status
  - Hands-on
    - Formula Flowcode Buggy
    - Arduino
    - Raspberry PI
    - Cyclone V GX Starter Kit
    - STM32F4DISCOVERY
    - UDOO Quad Starter Kit
    - Extra: RPI expansion board



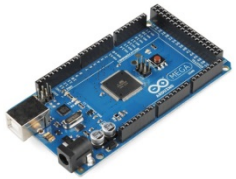






WP3

- Status
  - Hands-on
    - Watterott all delivered except TSU
    - Terasic all delivered (only exception on ROO)
    - Matrix all delivered
    - No UDOOs yet
    - AM some delay
      - » PCs
      - » RIOO NPUA
      - » 3D printer NPUA
      - » Logic Analyzers NPUA

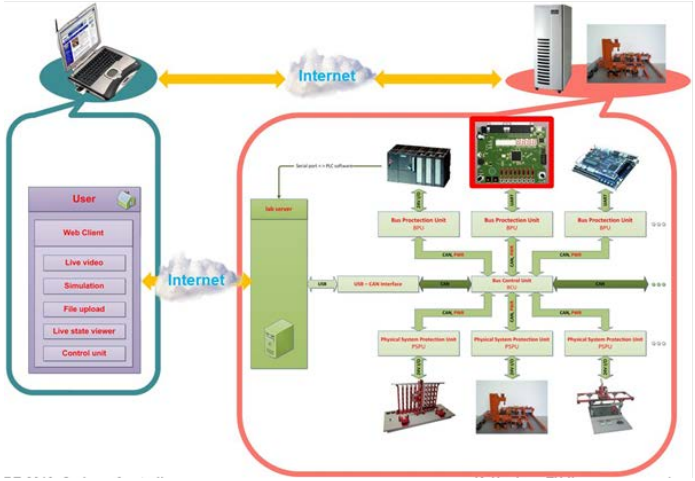






WP3

Co-funded by the Tempus Programme of the European Union

- Status
  - Remote labs
    - Server + PCs offers in all countries
      - » All delivered
      - » Server + PCs in AM planned
  - Operational?
    - No!
    - Planning IUT?



WP3

Co-funded by the Tempus Programme of the European Union

- Status
  - Overall, a lot of progress in thee last half year (before intermediate report)
  - Moodle implemented & used?
  - Actions needed
    - PCs AM
    - Rest AM
    - Making operational of Remote Labs
    - UDOO
    - (Moodle)
    - Work with material
    - Documents proving equipment in balance of target HEIs

WP4

Co-funded by the Tempus Programme of the European Union

- Retrain academic teachers on ESD engineering and virtual learning platforms
  - training of the academic staff on the use of the courses and the virtual environment
  - 2 weeks course on ESD at P1
  - 2 weeks course on virtual learning systems and remote labs setup at P2
  - 1 week course on teaching methods at P3
  - Content: getting started course material, demonstration, theory and practical exercises, input from EU private companies

WP4

Co-funded by the
Tempus Programme
of the European Union

- Status
  - UKF finished
  - IUT: finished
  - TMM: finished
    - Questionnaires processed?

WP5

Co-funded by the Tempus Programme of the European Union

- Pilot teaching/operation
  - definitive implementation of the new course material
  - dissemination of the course material with master classes in situ to a contact group of stakeholders
  - ambition:
    - 20 students,
    - 6 academic teachers,
    - 2 representatives of local enterprises
    - 2 representatives of public welfare

= challenge

WP5

Co-funded by the Tempus Programme of the European Union

- Pilot teaching/operation
  - present and demonstrate the new material and teaching infrastructure for creating a good insight in the starting and end competences attained
  - practical demos on expected results
  - train the trainer sessions organized within the target HEIs
  - a pilot group of students and stakeholders starts with complete courses, at least 4 in total
    - Status?
  - evaluation is organized

Co-funded by the Tempus Programme of the European Union

- Key performance parameters
  - attendance of stakeholders
  - relevant questions during demos
  - activity of staff and students on the e-learning platform, virtual and remote labs
  - ease of adoption of the new courses is also important for sustained operation
  - attained grades and competences of the pilot group

WP5

Co-funded by the Tempus Programme of the European Union

- Needs
  - Stakeholders (who, where, why)
  - Presentation - Demonstration
  - Peer training / assessment
  - Progress assessment pilot group (TC / EU)
  - Evaluation pilot group (TC / EU assessment)
  - Interviews teacher - students
  - E-conference teacher – teacher: Skype / Adobe Connect

    => Can this be organized? How?

WP5

Co-funded by the Tempus Programme of the European Union

- Deliverables
  - 5.1 Master Classes in "ESD" in TC
  - 5.2 Master Classes in "RL usage for ESD" in TC
  - 5.3 Teaching the teachers and researchers in TC
  - 5.4 Educate the pilote student groups in TC

WP5

Co-funded by the Tempus Programme of the European Union

- Status
  - How far is planning?
    - Will some courses be used?
    - Is a pilot group appointed?
  - Implementation travels
    - What is needed?
      - » IUT start up all remote labs
      - » TMMA for demo sessions

WP5

Co-funded by the Tempus Programme of the European Union

- Status
  - Action needed
    - Planning of MC in AM
    - An overview of implementation for each HEI
      - » What is taught to whom, when, where, which material, which assessment planned, how is impact en progress measured, how the results will be made public.

WP6

Co-funded by the Tempus Programme of the European Union

- Quality Assurance and Quality Control
  - high quality of results and smooth project implementation
  - monitoring strategies/methods
  - if quality differs from expected or if outcomes not achieved in time:
    - adjustment mechanisms are foreseen
    - conflict detection and resolving.

WP6

Co-funded by the Tempus Programme of the European Union

- Quality Assurance and Quality Control
  - PMT: appoint quality manager
  - quality manager will supervise:
    - comparison with timetable
    - evaluation of outcomes and their quality
      - » questionnaire reports based on feedback reports from target students /academics/ stakeholders groups

        Timely based and event based
      - » students, graduates and researchers interviews

        Is this done?
      - » online evaluation

        Is this actual?

WP6

Co-funded by the Tempus Programme of the European Union

- Quality Assurance and Quality Control
  - P12 - as research institute - is an external expert
    - What is done here? Which actions, which results? Where visible?
  - Viktor Kabatov, head of International technical center of JSC "Motor-Sich" is invited
    - Is this still actual?
  - inter project coaching as a part of external evaluation
  - expert's reports based on semester reports on project results

WP6

Co-funded by the Tempus Programme of the European Union

- Quality Assurance and Quality Control
  - Milestones:
    - PMT appoint quality manager;
    - feedback, questionnaire, annual reports;
    - online evaluation in function;
    - report inter project coaching;
    - external Expert's reports. (6.1)

WP6

Co-funded by the Tempus Programme of the European Union

- Key performance parameters
  - number of quality meetings
  - number of quality reports
  - number of feedback reports
  - number of feedback participants
  - number of external Expert's reports
  - number of reports of inter project coaching
  - assessment of the developed curricula to be accepted by national bodies and by HEIs to be incorporated in the present day curricula

WP6

Co-funded by the Tempus Programme of the European Union

- Deliverables
  - 6.1 Establish the Quality Assurance Plan
  - 6.2 Inter-Tempus coaching
    - Minutes of meetings with MMATENG and ICOOP present
  - 6.3 Monitoring/Evaluation of processes and products
  - 6.4 Assessment at the regional and national level
    - Assessment of new material? UA?

WP6

Co-funded by the Tempus Programme of the European Union

- Status
  - Alena Haskova (UKF) appointed as Quality Manager
  - Local quality institutes appointed
    - UA: BGKU
    - AM: YeTRI
    - GE: TSU
      - » Output?
  - Plan? UKF?
    - Systemized input, surveys
    - Reports

WP6

Co-funded by the Tempus Programme of the European Union

- Status
  - Actions needed
    - Surveys summer course (?), Master Classes, PM2
    - Output P12
    - Interviews for stakeholders by BGKU, TSU and YeTRI

WP7

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- Dissemination and Enterprise Collaboration
  - Action in TC is organized by P4-P12
  - reach out to the stakeholders (public, HEIs, industry)

WP7

Co-funded by the Tempus Programme of the European Union

- Dissemination and Enterprise Collaboration
  - University-Enterprise Contact Group (UECG)
    - university
    - local stakeholders (chambers of commerce, services for unemployed)
    - regional industry.
      - » Is this actual?
      - » At UA monitoring: stakeholders group
  - Contact group:
    - information on the project
    - plan seminars on specialized modules open to industry workers and unemployed
    - special dissemination seminars and road shows

Co-funded by the Tempus Programme of the European Union

- Dissemination and Enterprise Collaboration
  - local and national press and media to increase visibility
  - academic media (university journals to inform students and teachers at the TC HEI's)
    - A lot is done: don't forget to generate output, e.g. on DESIRE website

Co-funded by the Tempus Programme of the European Union

- Dissemination and Enterprise Collaboration
  - project website constructed and maintained to contain
    - project information
    - preliminary and final results
    - contact data
    - agenda's for seminars
    - secured section for developed teaching materials
    - public section: serve as a good practices collection.

WP7

Co-funded by the Tempus Programme of the European Union

- Deliverables
  - 7.1 Setup university-enterprise contact group (UECG)
  - 7.2 Maintenance dissemination and sustainability
  - 7.3 Dissemination in press and media
  - 7.4 Dissemination through web resources
  - 7.5 Seminars in target HEIs for industry workers
  - 7.6 Dissemination to enterprises

WP7

Co-funded by the Tempus Programme of the European Union

- Status
  - Dissemination events have been organized
    - Needs a formal way to make this tangible
  - Website is outsourced
    - It is improved a lot
  - UECG?

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- Status
  - DesIRE – plus
    - No candidates yet

"DESIRE – Plus" COOPERATION AGREEMENT

Dissemination and implementation of the outputs of TEMPUS project DESIRE
" Development of Embedded System Courses with implementation of Innovative Virtual approaches for integration of Research, Education and Production in UA, GE, AM " – DESIRE

544091-TEMPUS-1-2013-1-BE-TEMPUS-JPCR

Parties to the agreement

This is an cooperation agreement among the consortium members of Tempus "DESIRE", hereinafter referred to as "CoDESIRE" on the one hand and

.....
(name and address of organisation /university)

targeting dissemination, implementation and development of the results of DESIRE, hereinafter referred to as CoDESIRE-Plus, joint referred as PARTIES.

Subject of the agreement

The PARTIES will to joint their efforts aiming implementation, dissemination and developing of the results of DESIRE, particularly in the field of improvement of training high qualified specialists as well as in research activities.

For this purpose the PARTIES agree on the following activities:

1. CoDESIRE:
a) Will share with CoDESIRE-Plus information about the above project as the up-to-date timetable of Project activities and teaching /training aids developed during the Project
b) Will develop on the base of project portal www.tempus-desire.eu a sub domain called "DESIRE - Plus".

2. Every member of CoDESIRE-Plus:
a) Will study the information derived, develop a plan to adopt and implement in teaching activities or/and improve training of graduated professional staff.
b) Will develop a plan for participating at DESIRE activities, at actions on implementation and dissemination of project results (self-reliant actions, if possible joint actions with CoDESIRE), may participate at master classes/conferences of DESIRE in the frames of the Project,
c) Will regularly inform CoDESIRE about their activities concerning the subject of this agreement.
d) Will provide a feedback report used for quality assurance on the shared information or attended activities.

WP7

Co-funded by the Tempus Programme of the European Union

- Status
  - Action Needed
    - UEGC
    - External stakeholders
    - Output – dissemination – generate statistics on project impact, tangible outcomes, results

WP8

Co-funded by the Tempus Programme of the European Union

- Management of the project
  - Forming the Project Management Team (PMT)
    - one representative from each consortium member
    - strategic decision-making body
    - at least 4 coordinating consortium meetings,
      - » one kick off,
      - » progress 1 & 2
      - » final conference

WP8

Co-funded by the Tempus Programme of the European Union

- Status
  - PMT, DMB established
  - Local project plans established
  - 1 kick-off meeting
  - 1 regional meeting
  - 1 consortium meeting at UKF, IUT and TMM
  - Monitoring at GE and UA
  - 2 Progress Meetings
  - Intermediate report delivered
  - New payment received

WP8

Co-funded by the Tempus Programme of the European Union

- Status
  - Changes to the consortium
    - 3 name changes: final
    - 1 partner suspension

WP8

Co-funded by the Tempus Programme of the European Union

- Status
  - Action needed
    - Prepare final conference
    - Plan audit
    - Make budget reviews for staff and travel

FINAL CONFERENCE

Co-funded by the Tempus Programme of the European Union

- Consortium Meeting
- Methodologic conference
- Publish by participants?
- Staff & PhD
- 3 days in total
- Future collaboration
- Students?
  - Meeting planned at UKF 11 – 14 November

FINAL CONFERENCE

Co-funded by the Tempus Programme of the European Union

- 3 to 4 people invited
- Action needed
  - Send us what impact you want from this conference: before 11/11/2015.
  - At least one paper on project impact and results

FINANCIAL STATUS

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Planned Budgets

	Staff Cost	Travel Cost & Cost of Stay	Equipment Cost	Printing & Publishing	Other Costs	Total Direct Costs
	350.345	341.793	209.916	37.193	41.260	980.507
CEPU	-11.035	-14.256	-22.560	-2.700	-2.200	-52.751
	339.310	327.537	187.356	34.493	39.060	927.756
Actual Costs						
	188.699	186.975	128.967	200	7.394	512.235

(All-in EUR)

FINANCIAL STATUS

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- Remarks
  - Travel budget

	Travel Cost & Cost of Stay	Planned	
TMMA	7372	45000	37628
IUT	3529	30000	26471
UKF	8034	22000	13966
ZNTU	28866	30000	1134
CEPU	6162	25000	18838
DSEA	22434	25000	2566
BGKU	19572	25000	5428
NPUA	19046	25000	5954
NUACA	20520	25000	4480
GTU	18123	25000	6877
TSU	19181	25000	5819
YeTRI	14136	13000	-1136

Over budgetted

Under budgetted

DesIRE

FINANCIAL STATUS

Co-funded by the Tempus Programme of the European Union

- Remarks
  - Equipment budget

	Equipment	Planned
TMMA	0	0
IUT	0	0
UKF	0	0
ZNTU	20385	26200
CEPU	2440	25000
DSEA	23519	26200
BGKU	25577	26200
NPUA	5615	26200
NUACA	14315	26200
GTU	18787	26200
TSU	18330	26200
YeTRI	0	0
	128967	

FINANCIAL STATUS

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- Remarks
  - Printing & Publishing
    - Texts – courses – journal (WP7) – flyers – posters (WP7)
    - Final conference
  - Other costs
    - Inter project coaching
    - Promotion materials
    - Translation

BUDGET REVIEWS

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- Travel
  - Difference between tickets communicated and actual invoices (e.g. 7EUR insurance)
  - Needs a rectification document
- Staff
  - MMATENG
    - Average wages: not in line with EACEA rules
  - Graz
    - Annual salary slips + daily rates

BUDGET REVIEWS

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- Staff
  - Example

	Cost 2014	Hour cost : 1520 hours	Daily rate (*7,6 hour)
Dirk Van Merode	56.172	37	281

  - Remark: all costs are included:
    - I do not earn €56172/12 = €4681 a month => I wish!
    - My actual net wage is €2495 => so €2200 is taxes & social security

EXTENSION OF PROJECT

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- Equipment
- Budgets
- Pilot teaching

PRACTICAL ISSUES

Co-funded by the Tempus Programme of the European Union

- New currency convertor
  - UA: 1EUR = 24.2186 UAH
  - AM: 1EUR = 531.62 AMD
  - GE: 1EUR = 2.6827 GEL
- New logo from EACEA

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QR-CODE

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CONCLUSIONS

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- Home assignments
  - Look at action needed in red
  - Give impact expected from final conference
  - Make at least one practical assignment on one ES
    - Photo – video
    - Description of the expected operation
    - Code
    - Schematic
    - Problems / pitfalls

CONTACT

Co-funded by the Tempus Programme of the European Union

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