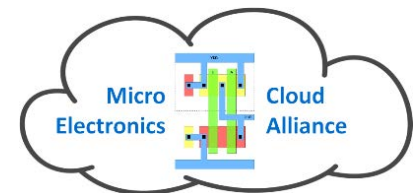


# MECA

Evaluation of the technical cloud questionnaires  
30th of May 2016



Co-funded by the  
Erasmus+ Programme  
of the European Union



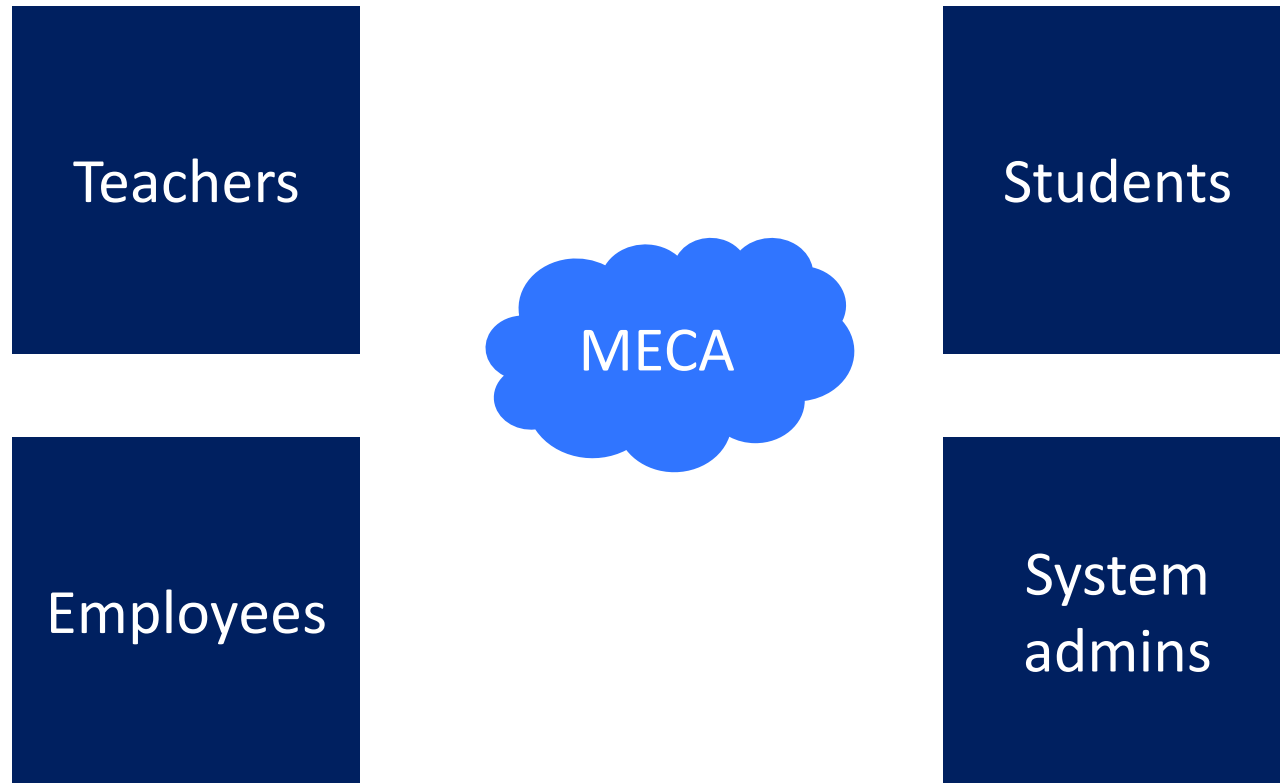
1. Intro
2. Stakeholders and requirements
  1. Teachers
  2. Students
  3. Employees
  4. System administrators



- First of all:
  - **Thanks** to all the partners for contributing their answers to the technical cloud questionnaire!
- Some figures
  - answers from 8 universities
  - answers from 8 companies
  - around 400 students
  - 40 questions

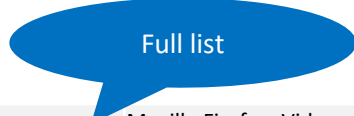
# Find out common requirements!

- Stakeholders in the MECA educational cloud:



## • Used software

- MS Windows / MS Windows Enterprise 8.1 64 bit
- MS Office 2010/2013, Office365
- CAD: Cadence Allegro, Mathworks MATLAB R2009a, AutoCAD, VisualCAM, LTspice IV, Eagle, Micro CAD, Spice, OrCAD, Ninguno, FreeCAD, Blender; Mentor Graphics Pads 9.5, + NX8, Catia V5, Solid Edge, Moodle, CADENCE, Microwind, IC-EMC
- Many other helpful programs (as expected)



MS Windows Enterprise 8.1 64 bit, MS Office 2010, Google Chrome, Double Commander, Mozilla Firefox, Adobe Acrobat Reader, CDBurnerXP, IrfanView, PDFCreator, VideoLAN VLC media player, Surface Evolver, LabView 8.6, Mathworks MATLAB R009a, Comsol Multiphysics 3.4	MS Windows Enterprise 8.1 64 bit, MS Office 2013, Google Chrome, Double Commander, Mozilla Firefox, Adobe Acrobat Reader, CDBurnerXP, IrfanView, PDFCreator, VideoLAN VLC media player, Autodesk AutoCAD 2014 wiew, DesignSpark PCB, Free 5, gEDA, KiCAD	MS Windows , MS Office 2010, Google Chrome, Mozilla Firefox, Adobe Acrobat Reader, PDFCreator, VideoLAN VLC media player, Microwind , IC-EMC , LabView , Cadence , HSPICE , MATLAB	MS Windows, MS Office 2010 + Office365, Google Chrome, Mozilla Firefox, Adobe Acrobat Reader, LabView, Mathworks MATLAB, Comsol Multiphysics, Cadence, Synopsys, Mentor Graphics	Moodle, Visual Studio, WinAVR, Eclipse, Amtel Studio, Matlab, Eagle, LT spice, Microsoft Word, Latex	MS Windows Enterprise 8.1, MS Windows 10 64 bit, MS Office 2010, Google Chrome, Mozilla Firefox, Adobe Acrobat Reader, CDBurnerXP, PDFCreator, VideoLAN VLC media player, LabView 8.6, CADENCE IC package, Synopsys, Mentor Graphics IC statsion, Model Sim Licensed, Coventor, Mentor Graphics PADS, Microwind, FloTherm,	Mozilla Firefox, Video LAN Converter (VLC), Adobe Reader, Evince, Libre Office, Energia/Arduino, gnu C compiler for different microcontrollers
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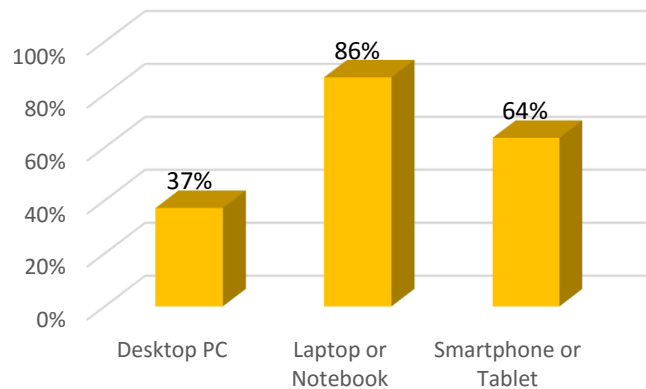
- See details in „2016-05-30 teachers evaluation version.xlsx“ on licenses available and license types, usage frequency & co.

- Do students have 24/7 access to the software and/or computers? If not - what is the restriction?
  - Usually yes, sometimes restricted access only from morning to evening on work days
- Where do students access the software from?
  - Campus network only: 47%
  - Campus network and from outside/home as well: 53%
- How many students access the software?
  - Depending on the university between 20 and 5392

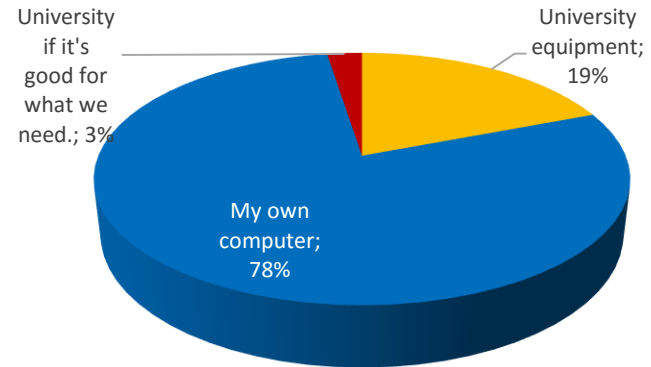
- Virtual laboratories: What is already available?
  - Range of answers: From nothing to VISR, MC68000, virtual laboratory, online lecture presentations, online video tutorials
- Virtual laboratories: What is possible?
  - Range of answers: Nothing, Basic electronic, electronic practices in a real remote lab, fieldbus simulations, virtual Laboratory

## Types of private computers

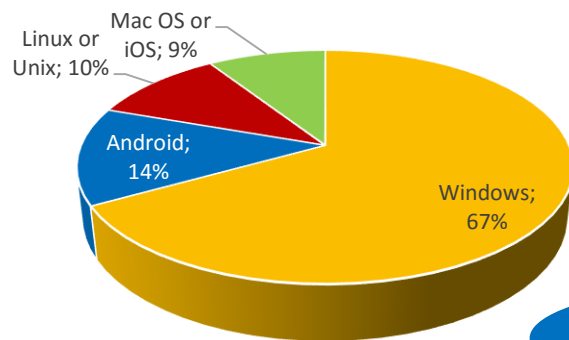
(multiple answers allowed)



## Own computer or university equipment preferred?

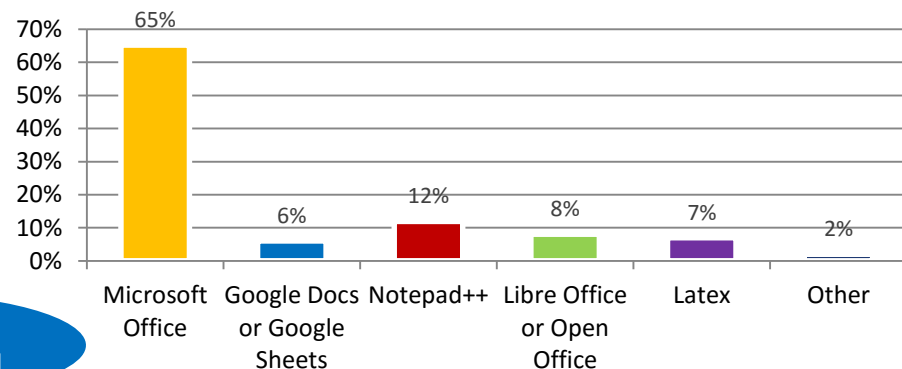


## Preferred operating system



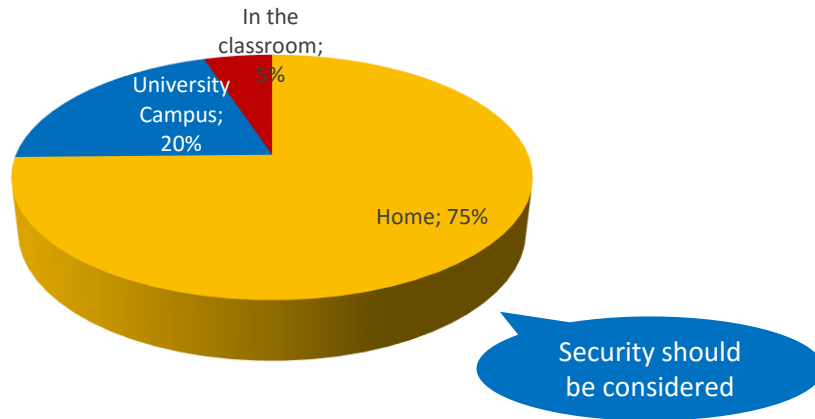
Commercial software preferred

## Preferred text editors/processors

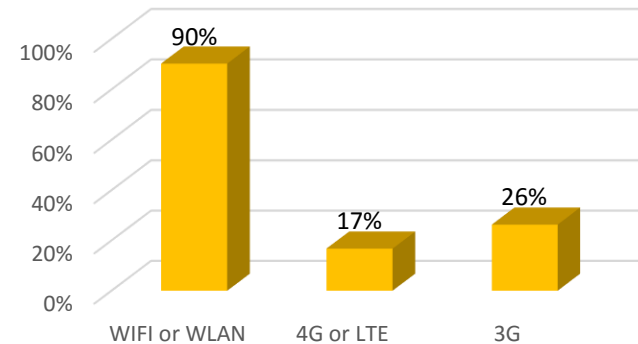




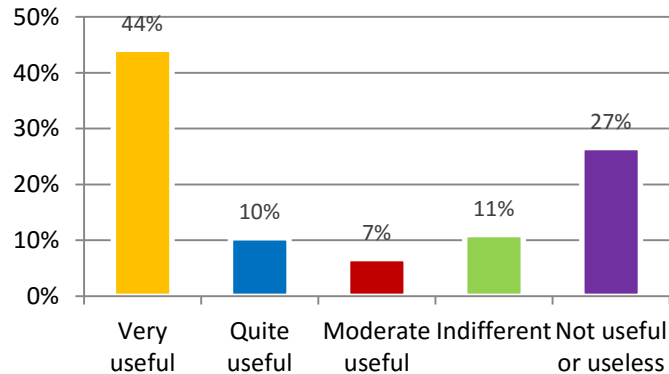
## Primary place of e-learning access?



## Which kind of mobile internet do you use for e-learning? (multiple answers allowed)



## Access a CAD (Computer Aided Design) software on a tablet



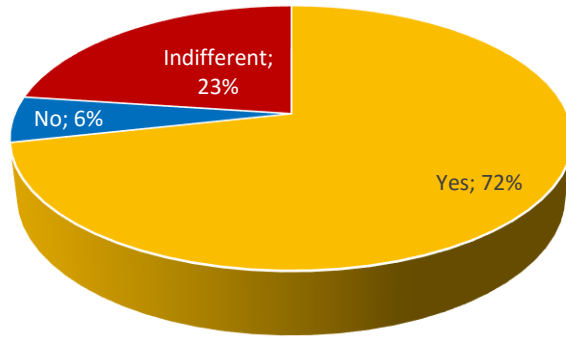
## Time in hours spent on a typical e-learning session

**MIN = 0,8 hours**  
**MAX = 2,5 hours**  
**AVG = 1,7 hours**

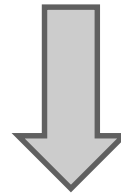
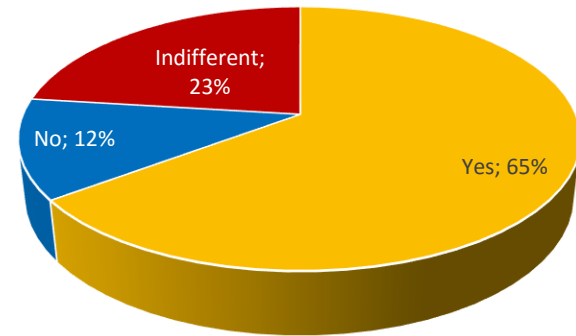
Interesting for server resource sharing!

# Answers from students 3 - sharing

**Would it improve your learning experience if you could share your own CAD, Word or text files during exercises with other students?**



**Would it be interesting to share those files with students from other countries?**



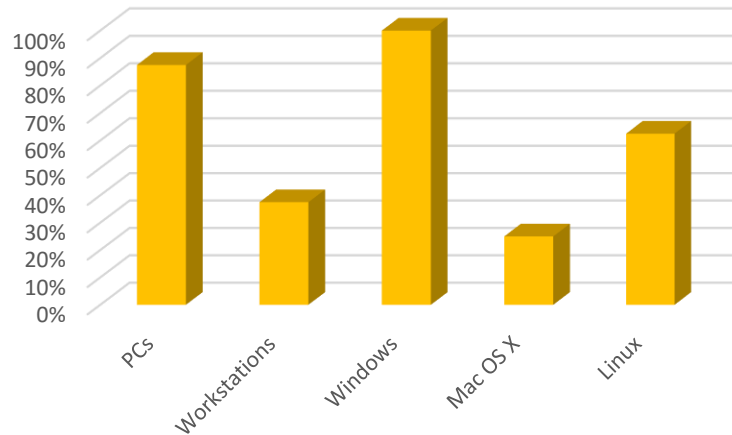
File sharing could be offered in the educational cloud

- How can employees use the e-learning courses?
  - currently different situations in each company:
    - some: e-learning courses not or rarely, learning mostly off-line
    - many: on-demand if some specific information is needed
    - many: at work or at any place / mobility
    - some: knowledge sharing via email / intranet
    - many: e-learning offers of software providers are in use
    - many: webinars on different topics are in use
  - future
    - most: on-demand and downloadable web courses most suitable - these courses can be studied at any time.
    - important for most: Access during and after the (busy) working times
    - some: organized group e-learning process (employees in a group in front of online courses)

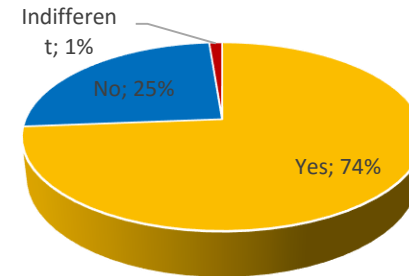
- How should they be integrated in the educational cloud?
  - low requirements
    - simplified access to resumes, tutorials and browsing
    - individual access / accounts on a per user base
    - online is preferred over downloads and software-based off-line learning
    - courses in form of video tutorials, virtual rooms or simple slide presentations are all useful
  - Content wishes
    - interested in electronic packaging, assembling technology, R&D
    - facilitate integration of sensors into complex systems
    - Courses on electromagnetic compatibility (EMC), electrostatic discharge (ESD), assembling technology, reliability and life-time prediction

## End user computers

(multiple answers allowed)



Exchange between company users from different companies? e.g. forum, chat or sharing of created CAD files?



**Is there a need for both e-learning in the form of courses and in the form of training of software (CAD, simulation, other) as well?**

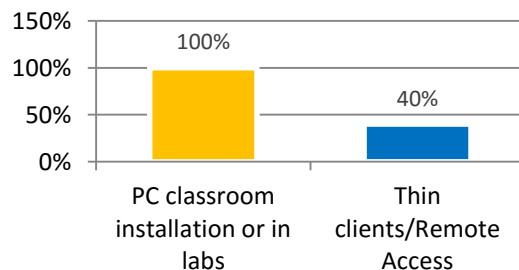
➔ 100% yes 😊

Further details can be found in “2016-05-30 employees in companies evaluation version.xlsx”.

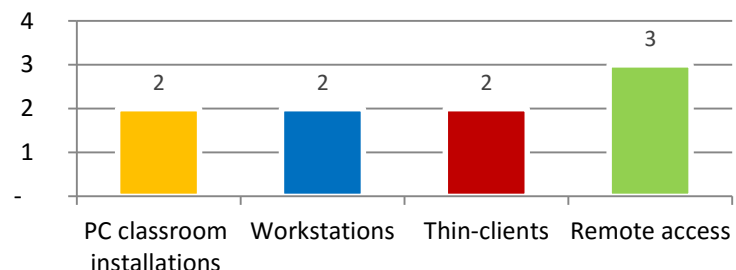
## First of all:

- The answers from the admins where more qualitative, less quantitative
- Have to be discussed in detail during the admin's round table session
- *Very, very broad* range of systems and software in use
- See details in „2016-05-30 system administrators evaluation version.xlsx“

## Classroom training for students?



## E-learning for students? (number of partners)



## Which operating systems are in use?

Windows 10, Windows 8.1, Windows 7,  
Windows XP, Windows Server 2012,  
Windows Server 2008 R2, Mac OS X,  
BSD, Linux, Ubuntu, Debian, CentOS,  
Vmware ESXi, Solaris 8

Nearly all  
available ;-)

## Which hardware is in use?

**Big variety** – Examples:

- Intel Core 2 Duo, 2 GB 800MHz DDR2 RAM, 350 SATA HDD
- 1 GB 800MHz DDR2 RAM, 160GB SATA
- Intel i5, Intel Xeon
- Dual core desktop PC-s with 2 GB of RAM
- Server with 4 GB of RAM
- SUN Fire V240

## What kind of software requirements has the CAD software?

All of the answers created a nice map for

- Labview
- Mentor Graphics
- Comsol Multiphysics 3.4
- MATLAB, Synopsys IC station and Model Sim
- Cadence Allegro
- AutoCAD
- VisualCAM

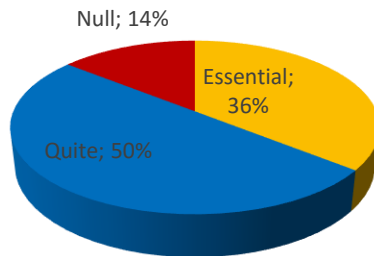
## Central directory services (LDAP, Active Directory, eDirectory, other)

**YES = 46%**

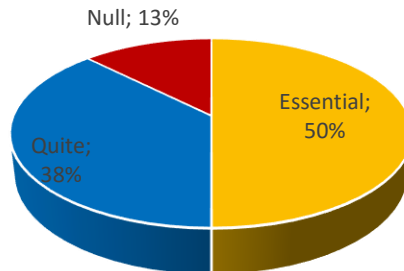
**NO = 54%**

Probably cloud  
should NOT integrate  
for complexity  
reasons

**Ready to use virtual machine template with CAD software useful?**



**Ready to use virtual machine template with Moodle useful?**



**Which numbers of computers could you bring in to the educational cloud?**

From 0 over 1, 5 and 6 to 36

Very good!



**In positive case, what would be the greatest motivation to migrate to that scenario?**

- **lower maintenance cost / reduced TCO**
- **efficiency / resource utilization**
- **easier deployment / faster implementation of new software or upgrading software**
- **flexibility**
- **wider accessibility / more of simultaneous connections**
- **improvement of quality of services**
- **speed / increased performance**
- **platform redesign with performance and higher availability**

**What do you think about the scenario of moving from hardware over to a private cloud? 64% positive!**

# Thank you for listening!