

# Cyber-Physical Industrial Systems

## MODULE 1 SESSION 1

### ESTABLISHING THE PROJECTS' SUBJECTS AND FORMING THE TEAMS

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#### *LECTURER NOTES*

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#### METHODOLOGICAL ASPECTS

1. It is advisable to have no more than three or four students in a team. The team will have to work together for building an experimental setup, so there is not so much place even for four students to work together on the same table.
2. Allow the students to initially form the teams based on their preferences, but don't accept unbalanced teams, formed only by very good students or only by less active students.

#### ESTABLISHING THE SUBJECTS

Encourage the students to think about subjects from the companies they are working in or about subjects from fields with which they are familiar.

Ask them to think first about "what problems need to be solved", not first about "what I can do with a computer".

Explain, in simple words, that there is about building a computerised system which will measure some values, will perform some computing, eventually take some simple decisions and then send the data on the Web to be analysed by powerful Artificial Intelligence software.

Encourage each member of each team to come up with an idea and then encourage the teams to discuss together and choose an idea which they will be able to finish.

Explain why some ideas, maybe good ones, are not possible to be realised during the course.

Explain, if the case, why some ideas are not applicable.

**Be careful that the lab will have to provide the students with the necessary components and also the students will have to perform measurements in a setup which will have to be as similar as possible to the real situation.**

#### SUBJECTS EXAMPLES

- Machine tool's vibrations measurement system
- Eyeglasses frame able to measure the body temperature and user's pulse
- Self-sufficient plant watering system
- Fuel station safety system
- Pressure-based auto-adjustable orthosis
- Intelligent recipients picking system
- Battery changing robot
- Avionics air pressure measurement system