CBI 2 (2014 - 2015)

Introduction to the next round

Universities

Aalto University, Finland - Engineering, Art & Design, Business
NTUA, Greece - Architecture, Mining & Metallurgy
UNIMORE, Italy - Business Engineering
ESADE + IED + UPC Barcelona - Business, Engineering and Design
Swinburne, Australia - Design Engineering
NTNU, Norway - Product Development

Topics to cover in teaching

Needfinding and human centred design
Benchmarking & basic research
Documentation
Testing
Low-resolution prototyping

Convergence: Fixing the problem
Ideation (& black hole)
Convergence: Fixing the solution

New iteration of needfinding, benchmarking, ...
High-resolution prototyping
Concept development
Presentation & communication

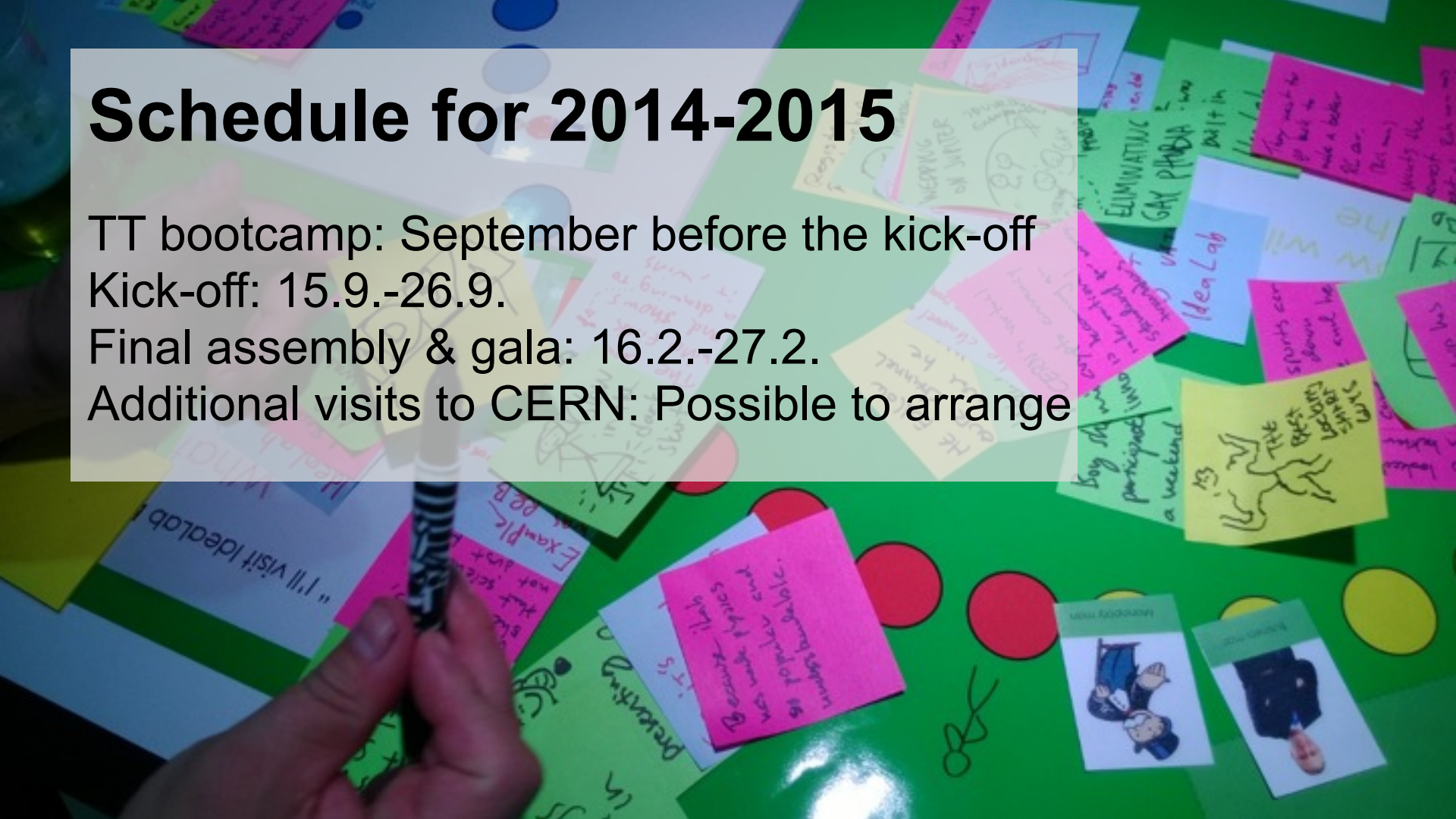
Topics to cover in teaching

Possibly also:

- Presentation training with magicians
- Visual storytelling and video editing
- Digital fabrication tools 101 (3d printing, laser cutting)
- Rapid software prototyping
- Arduino 101
- ...and other interesting topics that support creative collaboration

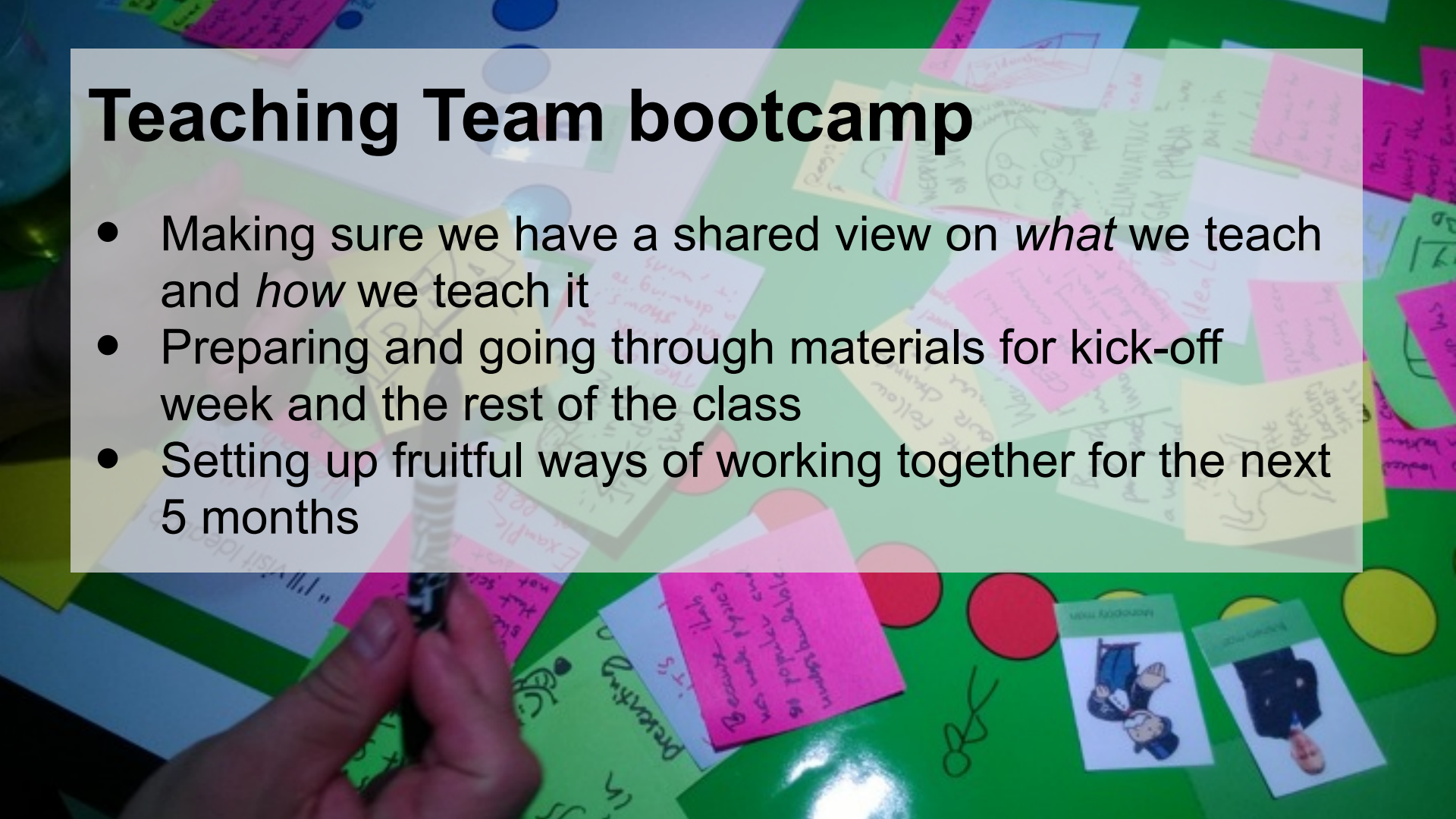
Schedule for 2014-2015

TT bootcamp: September before the kick-off
Kick-off: 15.9.-26.9.
Final assembly & gala: 16.2.-27.2.
Additional visits to CERN: Possible to arrange



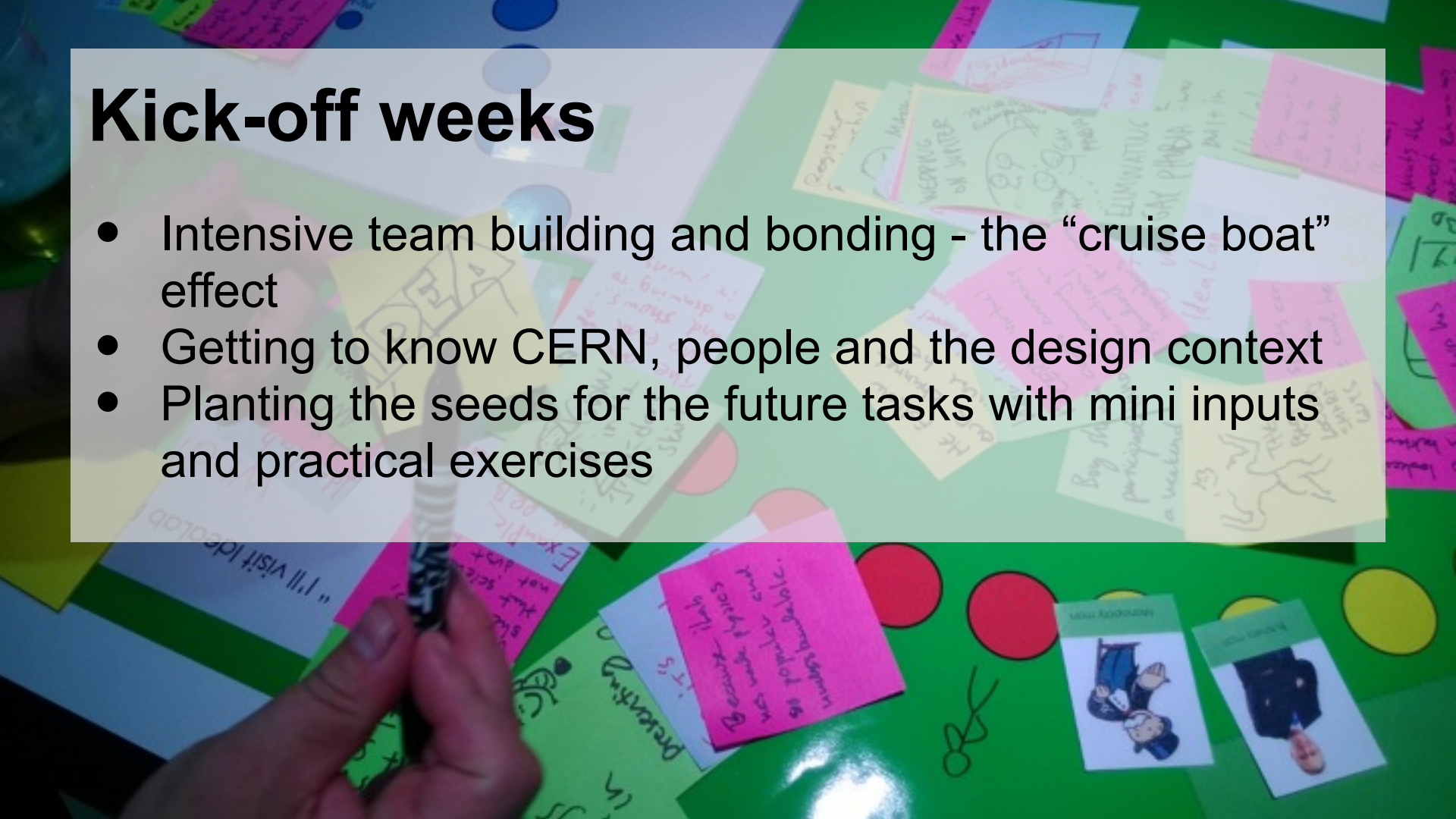
Teaching Team bootcamp

- Making sure we have a shared view on *what* we teach and *how* we teach it
- Preparing and going through materials for kick-off week and the rest of the class
- Setting up fruitful ways of working together for the next 5 months



Kick-off weeks

- Intensive team building and bonding - the “cruise boat” effect
- Getting to know CERN, people and the design context
- Planting the seeds for the future tasks with mini inputs and practical exercises

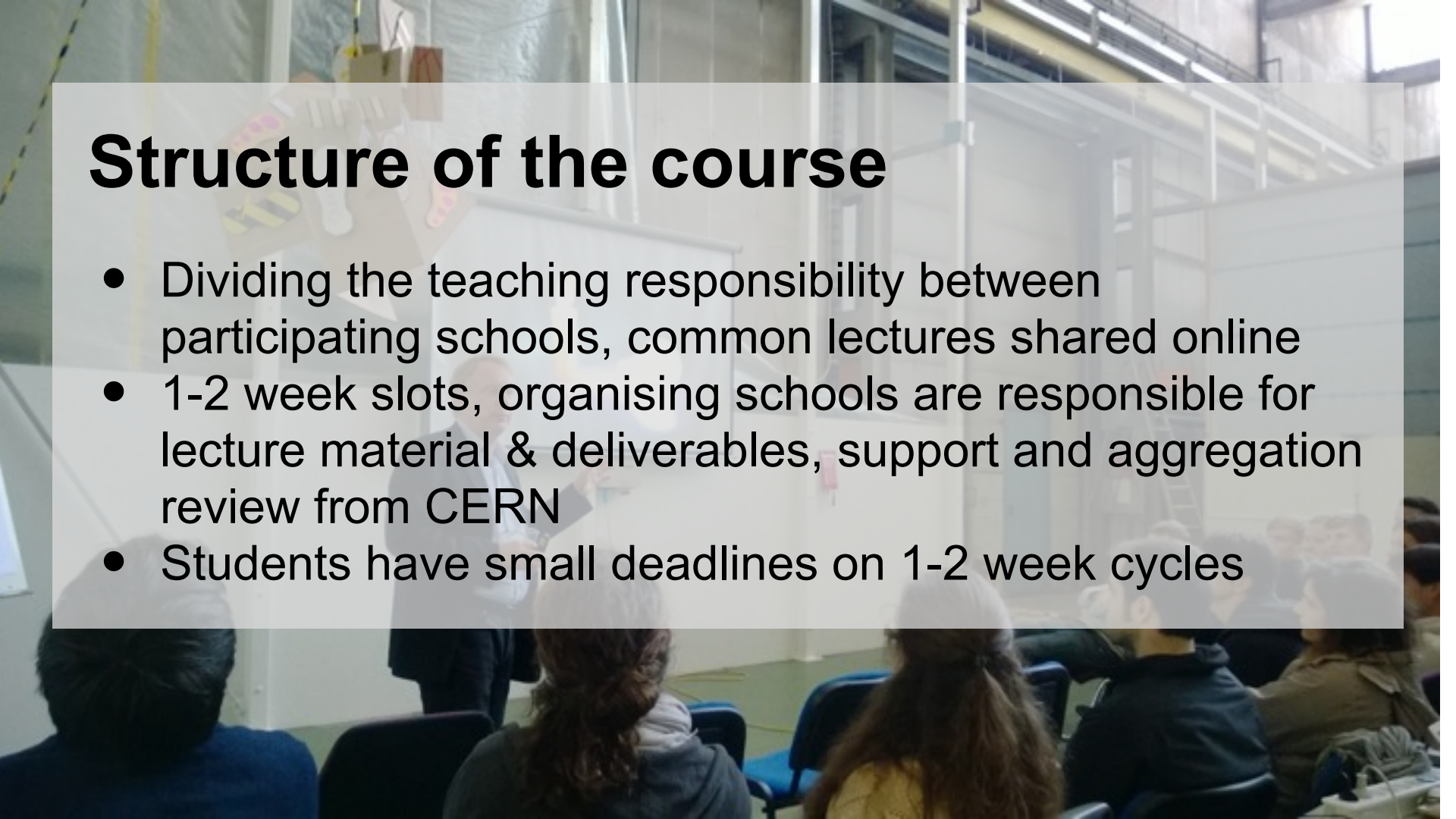


Kick-off week activities

Visits
- Globe, ATLAS, CMS

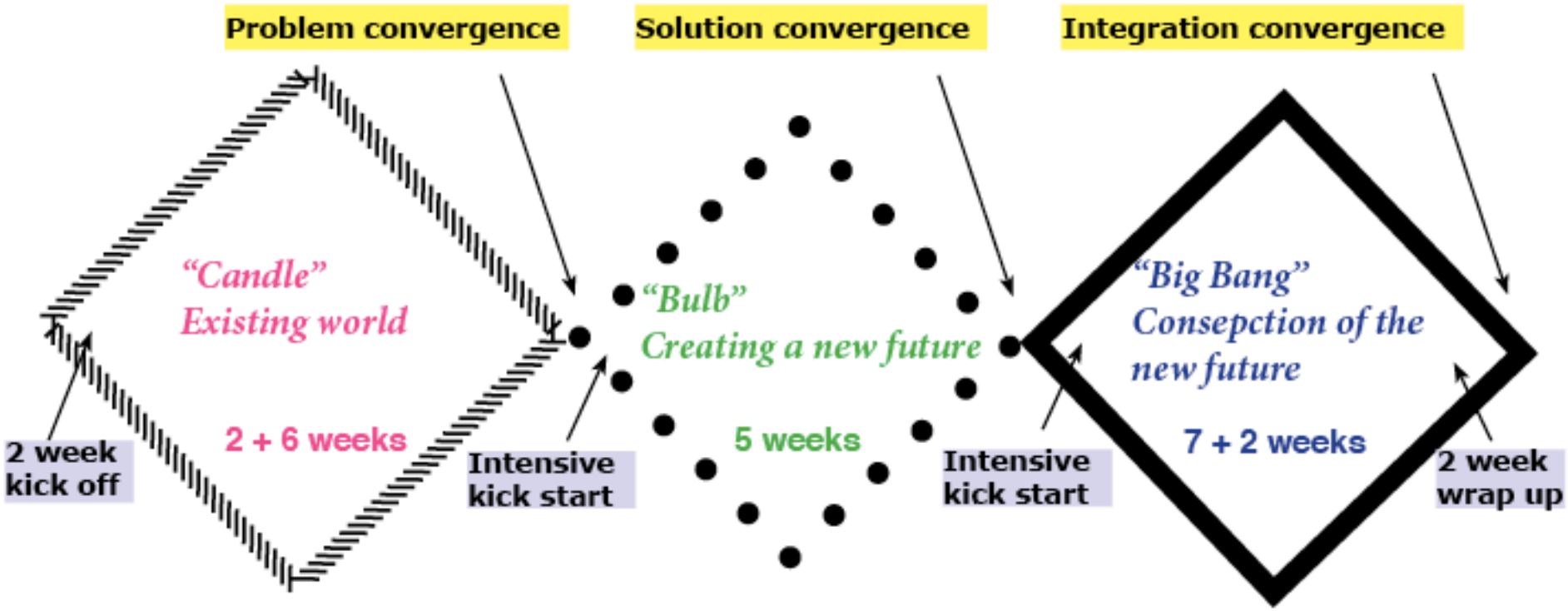
Events
- TEDxCERN

Basic exercises
- Egg drop, needfinding, experience prototyping, distributed work challenge...



Structure of the course

- Dividing the teaching responsibility between participating schools, common lectures shared online
- 1-2 week slots, organising schools are responsible for lecture material & deliverables, support and aggregation review from CERN
- Students have small deadlines on 1-2 week cycles



Goals of phase I:

- Undestanding the problem on a deep level.
- Convergion on a design mission.
- Understanding the importance of testing.

Goals of phase II:

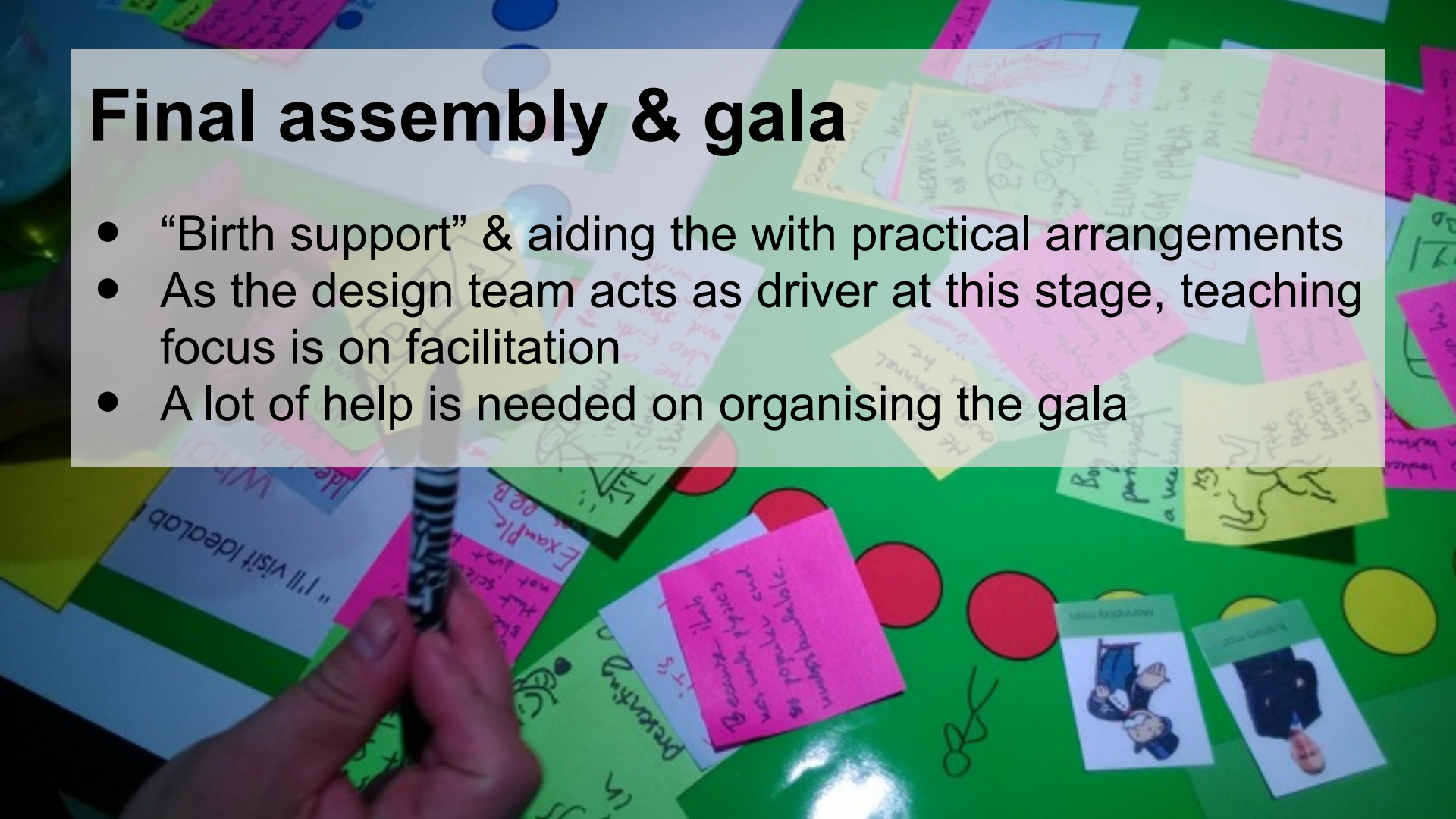
- Understanding the solution on a deep level.
- Understanding why the solution they choose is the best and what possible impact it will have.

Goals of phase III:

- Team is able to work together and create an integrated whole
- Team is able to advance in functional steps and with minimal procrastanation
- Team members find meaningful ways to contribute to the whole

Final assembly & gala

- “Birth support” & aiding the with practical arrangements
- As the design team acts as driver at this stage, teaching focus is on facilitation
- A lot of help is needed on organising the gala



- Roles
- People
- TTeam global coordination & codes of conduct
- CBI online platform
- Funding
- Spaces
- Deliverables & goals
- Student selection
- Shared responsibilities

CBI 2 (2014 - 2015)

Roles - Partner universities

Distributed teaching for the whole network on agreed periods

Travel, prototyping expenses and coaching resources for the students

Weekly coordination in the home universities

- Coaching student teams (weekly)
- Global TT interaction (weekly)
- Teaching and helping with practical arrangements during the intensive periods

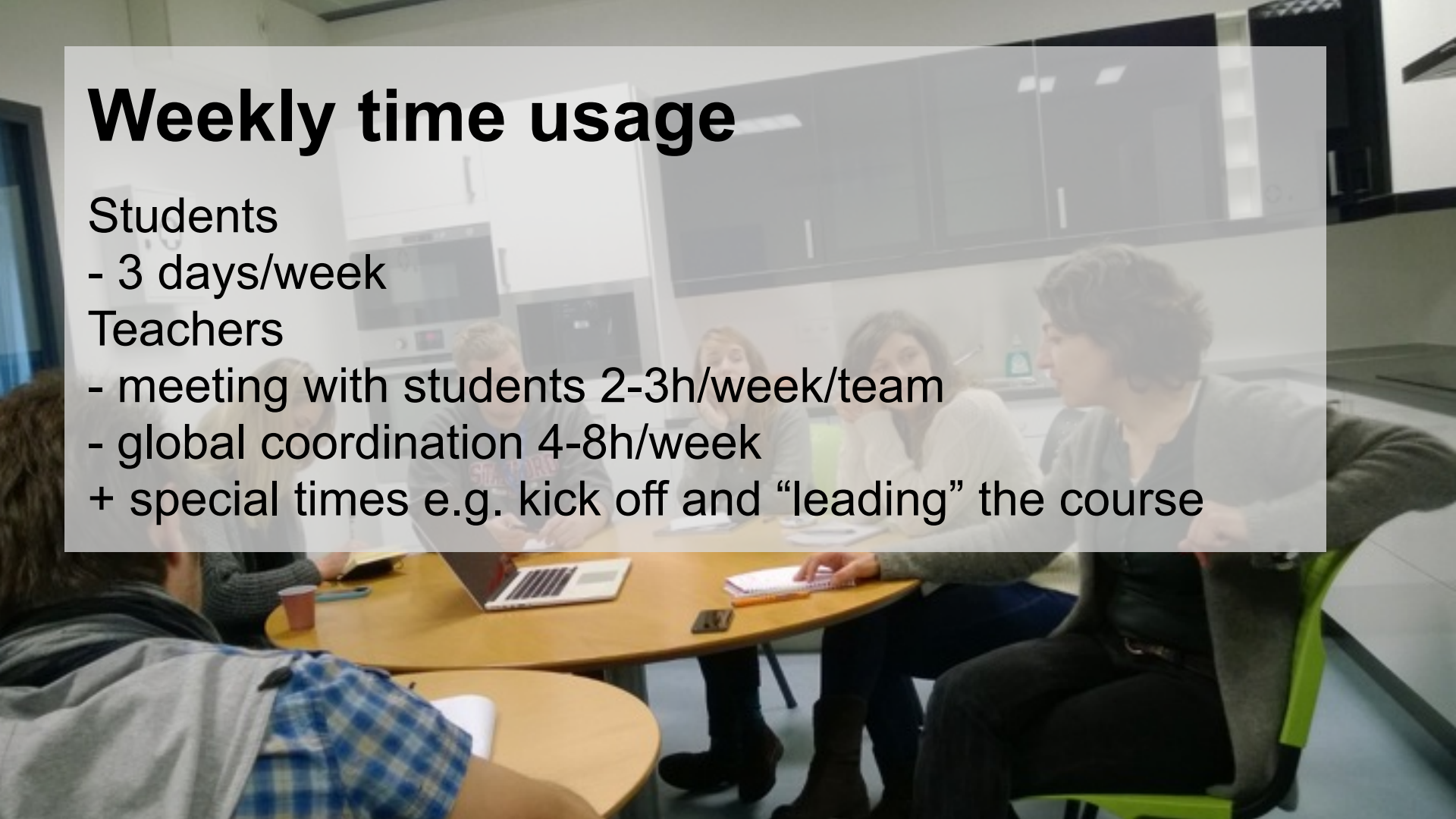
Roles - IdeaSquare

- Drives the global coordination during the whole course
- Responsible for the pedagogical approach - “CERN way of doing”
- Managing the online platform
- CERN interface
- Provides supplies, space and people during the intensive weeks at CERN

Weekly time usage

Students
- 3 days/week

Teachers
- meeting with students 2-3h/week/team
- global coordination 4-8h/week
+ special times e.g. kick off and “leading” the course



Local spaces

- e.g. 24/7 open video window to CERN & loft for building & storing the prototypes
- What is possible in Athens?

Funding

- Aalto & UNIMORE last year: 2,5-3k/student excluding most of the teaching expenses. Consists of:
  - 2 x travel costs to CERN & accommodation for 4 weeks
  - 2000€ prototyping budget per team
- External sponsors are possible
- How IdeaSquare can (and can not) help?

People

- Problem owners (relevance)
- Tech angels/experts/CERNrs (feasibility)
- Coaches (process facilitation)
- Project domain experts (advancing learning)
- Students (learners & developers)
- IdeaSquarers (global coordination)

TTeam global coordination & codes of conduct

- Decisions on project content will be made by the students themselves.
- Feedback should always be positive (what was good) and constructive
- Transferring knowledge < encourage experiential learning
- Instead of providing ready answers, your role is to support the students themselves discover the knowledge they need

TTeam global coordination & codes of conduct

- The course will have shared, hard, deadlines that are shared by all the teams. These are the only deadlines or tasks given from the course.
- Theoretical/transcendent knowledge should be kept minimal and always backed up by helpful examples
- Leave room for the students to surprise you, question the very basics, let them find their way even when you find yourself in doubt

Possible topics for design brief

- Learnings:
  - More focused definition
  - Clear CERN connection
- From CERN side…
  - TALENT: topic related heavily on a big impact, e.g. UN Millennium goals
  - CMS / Martin Gastall: Fiber optic sensors and power transfer, sustainable energy from CERN cooling towers
  - Marco Manca: Designing open source medical devices (e.g. EEG for hacking purposes), Exoskeleton & muscle control, Quantum brain project, measuring uterus dilation during birth
  - And other topics on early discussions

CBI online platform

- Online platform managed by IdeaSquare
- Sharing material and lectures for distributed teaching and from weekly meetings
- Course communication to single channel
- Clarifying deadlines – extensions still negotiable, but only with good reasons.

Communication

- Internal communication
  - Language from CERN
  - How to harmonize teaching team interaction styles with different universities?
- External communication
  - Blog
  - Video

Deliverables & goals

- Along the same lines with CBI 1: Proof-of-concept prototypes demonstrating the teams idea & report deliverables describing the project
  - More time for testing & refining the final prototypes

Student selection

- Motivation and desire to learn > CV
- Desire for practical work > theoretical learning

Next steps

- Confirm arrangements for the next round - ?
- Future rounds & other collaboration