



WG2.4: Syllabus committee

19th January 2018

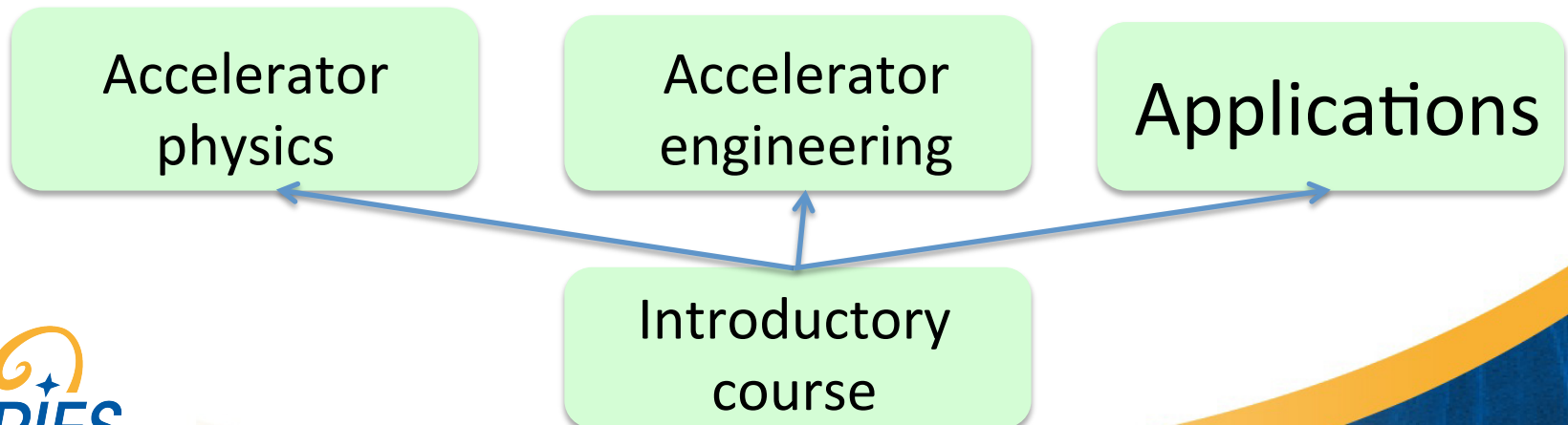
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Charge of the committee: today's meeting

- Discuss and agree on a draft syllabus.
- Discuss names for topics coordinators.

Change since the last meeting

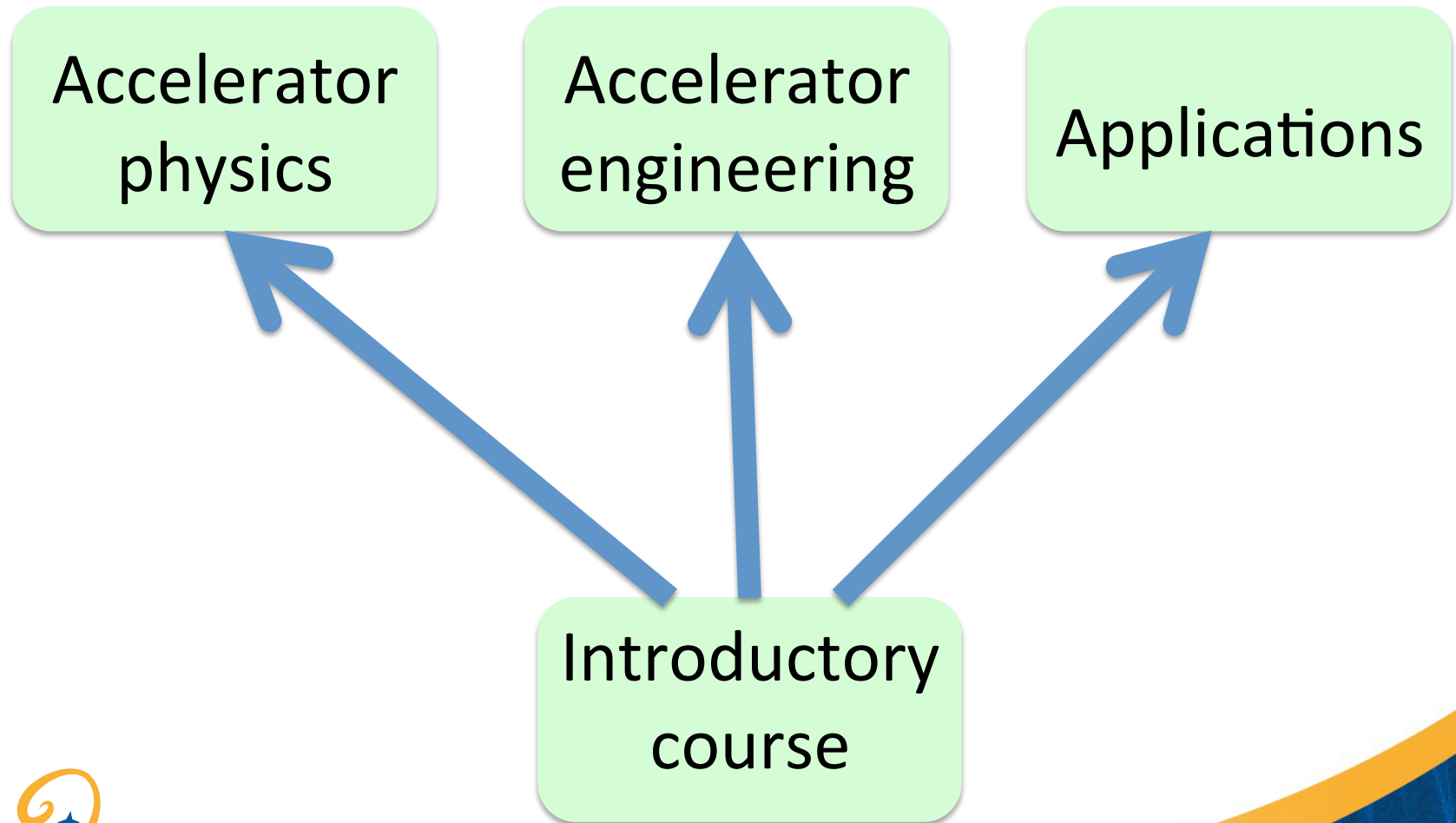
- Several members of the committee mentioned that aiming at a 10h course from the beginning would be too much at the beginning.
- There were also some concerns about the different learning paths.
- A shorter unified syllabus has been circulated.
- The aim for this introductory course will be to have very simple lectures with illustrations about accelerators.
- This course can then be completed by more specialized courses.



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- The aim for this introductory course will be to have very simple lectures with illustrations about accelerators.
- This course can then be completed by more specialized courses.
- The first video of the first course is very important as it will be on the basis of that video that student will decide to watch the course or not.
- Several people recommended to use very short videos (2-4 minutes).
- They also recommended to avoid having too many different lectures.

New organisation



Draft syllabus

- Duration : 4 hours
- What is an accelerator?
- Electromagnetism with no pre-requisites
- Special Relativity with no pre-requisites
- Applications of accelerators and the future

- We will look at each topic separately.

- *Note: each topic will be split in several 7-8 concepts, each concept will be presented in a video with a maximum duration of 7 minutes.*

What is an accelerator?

- Overview of accelerators and their applications in Europe and in the world;
- Architecture/types of accelerators;
- Basic building blocks (magnets, accelerating sections, RF,...);
- History/key dates and main drivers (Nuclear physics, HEP, light sources).

Electromagnetism

- Static EM fields;
- Charged particles in EM fields;
- Solving differential equations in EM;
- Very basic linear optics

Special Relativity

- Motivations for SR
- Lorentz Transformations
- Relativistic dynamics
- 4-vectors
- Transformation of EM fields

Applications of accelerators and the future

- HEP
- Light Sources
- Medical accelerators
- Neutron sources (incl. ESS) (incl. Myrrha?)
- Accelerators for arts and heritage
- Future HEP colliders
- New acceleration techniques



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Thank you

Organising the course

- We will agree on a skeleton for the course made of several topics.
- Then we will identify topics coordinators (they can be current members of the syllabus committee).
- Each topic coordinator will be in charge of refining the topic and the split between the concepts (video) and proposing a list of lecturers.
- The detailed content of each topic will be discussed during our February and March meetings.
- Once the list of concepts and lecturers will have been agreed, the lecturers will be contacted.
- Each lecturer will then prepare his lecture in coordination with the topic coordinator and one or two members of the syllabus committee (to ensure homogeneity).
- Each lecturer will then choose a recording center where the lecture will be recorded.

Who does what?

- **Syllabus committee:** Choose a list of topics and of topics coordinators. Ensure global homogeneity and community representativity.
- **Topics coordinators:** define the concepts in the topic and choose the lecturers. Try to minimise notation differences for the same object between lecturers.
- **Lecturer:** develops the concept in a few slides (and associated documents) in coordination with the topic coordinator and one or two members of the syllabus committee. Is filmed for the lecture.
- Do we want the first video of the topic be an overview of the topic by the topic lecturer? Or the last one be a summary?
- *Note: we will cover travel expenses to/from the recording center for the topics coordinators and lecturers but no other expenses (There will be no stipend for the lectures).*
- (discussion)

What do we expect from the lecturers

- A short summary of the concept developed in the video.
- The lecture slides (maximum 1 per minute, very light)
- The text of the lecture that will be displayed on the teleprompter during recording. It will also be needed for subtitling (and translation).
=> Do we want to make this text public?
- A list of key words to form a global glossary for the course (and to be added in wikipedia?).
- Separate graphics to illustrate what is being said. We have a (limited) budget for graphics and animations if needed.