February 1, 2019

IRL

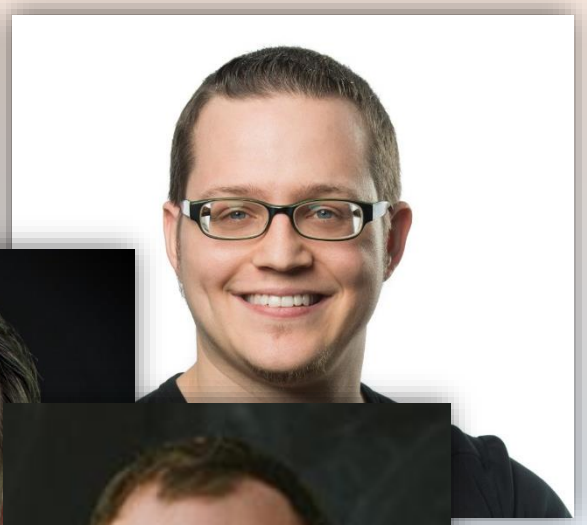
Innovative Retail Laboratory

SAARLAND UNIVERSITY
COMPUTER SCIENCE

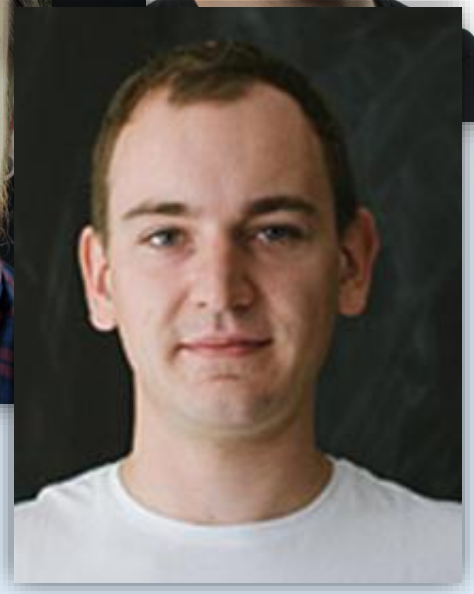
Innovative Retail Technologies Seminar 2019

Kickoff

Pascal



Marco



Felix

Organizers

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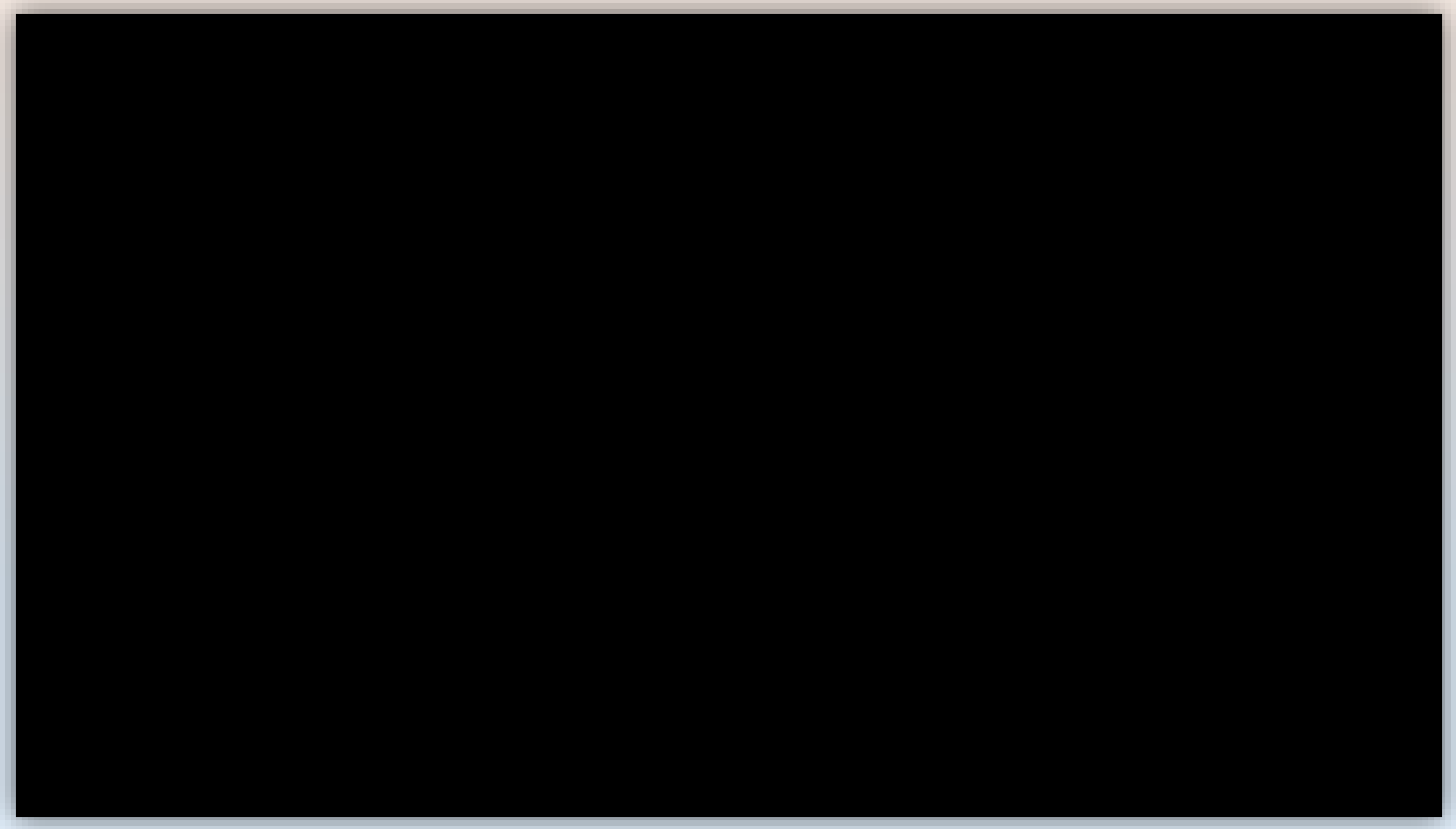

DFKI

Living lab

Context

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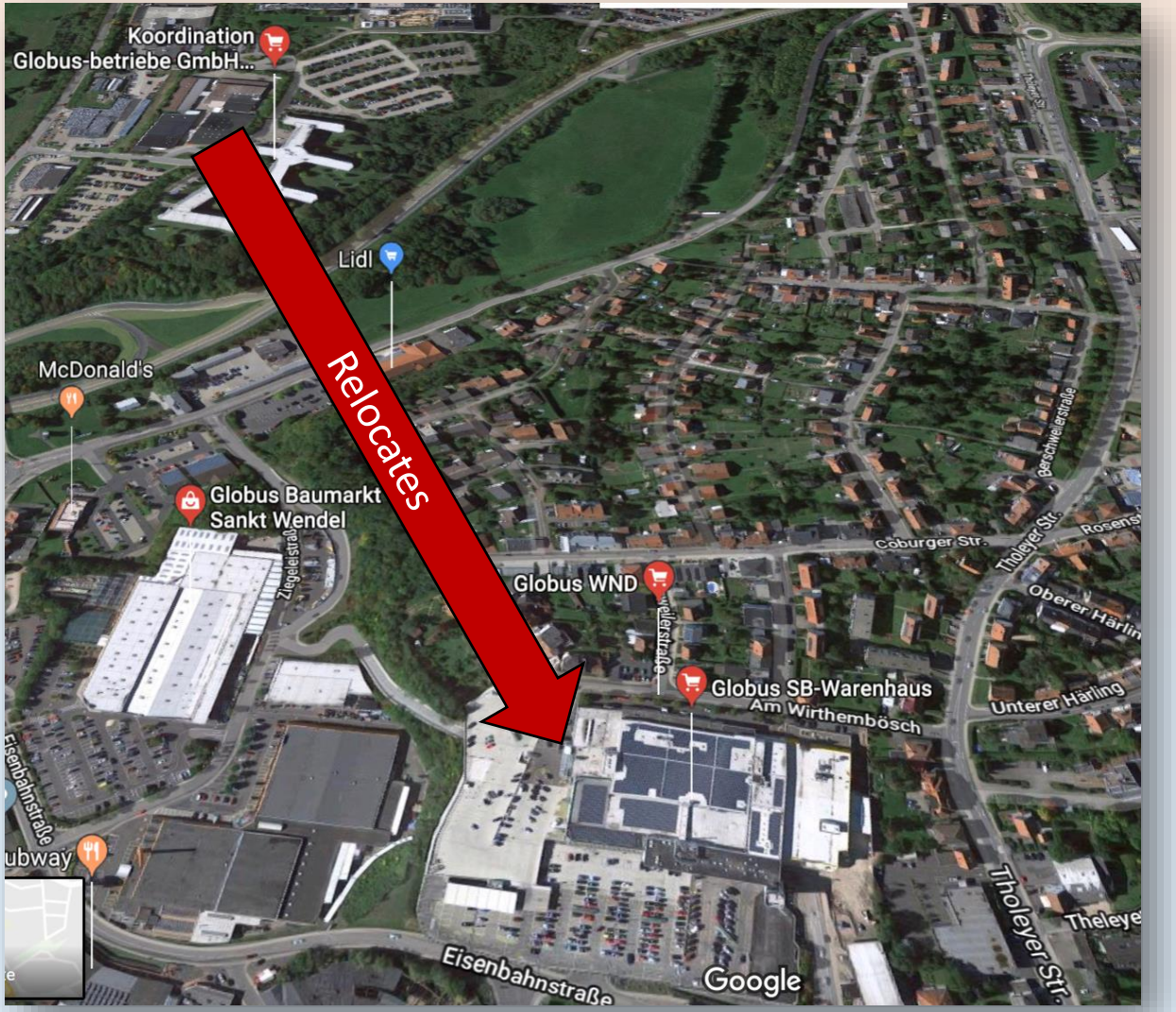

Context

Project 4: Intelligent Trash Bin

Customer: Nico Herbig

Group size: Min: 4, Max: 6

Recommended skills:
- Experience in Computer Vision and Deep Learning
- Experiences in hardware development to use sensors, etc.

Technology that should be used:
- Python, OpenCV, Keras/Tensorflow for optical product recognition
- Node.js / AngularJS for the visualization
- Arduino for the scale

Is prototyping of physical components necessary: Yes.

This project aims to **build a trash bin** that knows **what is being thrown** away **via deep learning image recognition**.

Combined with a different system (which is not part of this project) **that knows what you bought**, this allows **you to have an accurate inventory of products you have at home**.

A small visualization (webpage) to show **what is currently in the trash bin** should be realized as well, which is also able to communicate the recognition results to an inventory system typically by a REST interface or websocket communication.

Finally, **a scale should be integrated** into the trash bin as well to know if a product was full when thrown away (which means you bought too much of it).

For the list of specific project requirements and the project grading scheme, open this link.

17 projects offered

Project 12: Allergen FiltAR

ity3D / C#
eality (Vuforia)

- Hololens

Is prototyping of physical components necessary: No.

This project has the goal to develop an **Optical-See-Through Augmented Reality (AR) application by using the Microsoft Hololens.**

It should visually filter out **products at a food shelf by visualizing different rectangle overlays on top of the unwanted/uninteresting products**.

The products to be overlaid are chosen based on the allergen profile of the user. This profile will be accessible via APIs that we provide.

For the list of specific project requirements and the project grading scheme, open this link.

Practical seminar - Projects!

IRL researchers

You will work closely with one customer

They provided the project idea and will elaborate on details

They will supervise and grade their project

Customers - Supervisors of projects

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Your realized seminar project might be integrated into the new IRL!

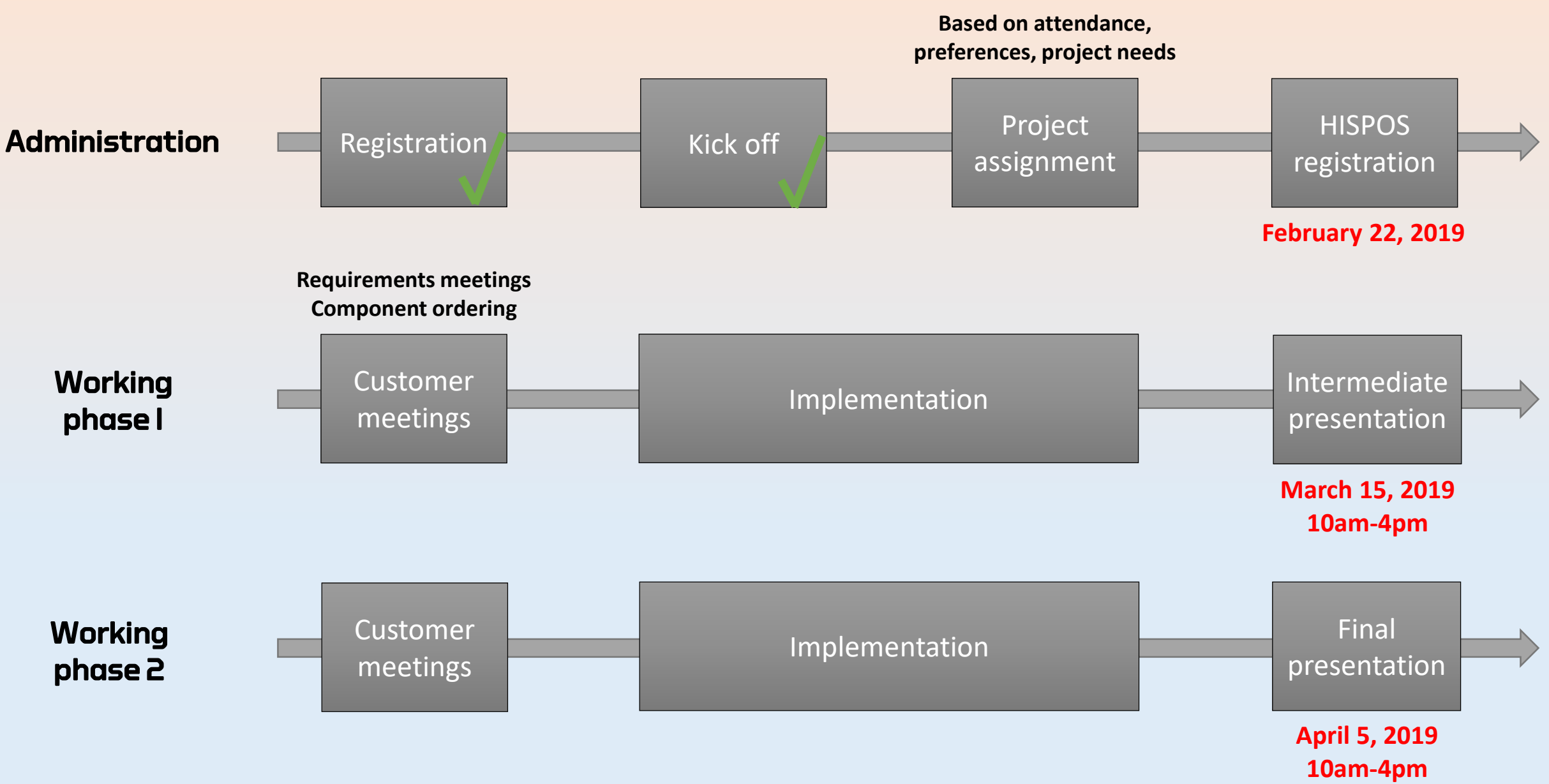
If you **do not want** that the resulting project will be presented there, **please do not participate**!

DFKI

Living lab

Context

The seminar in a nutshell



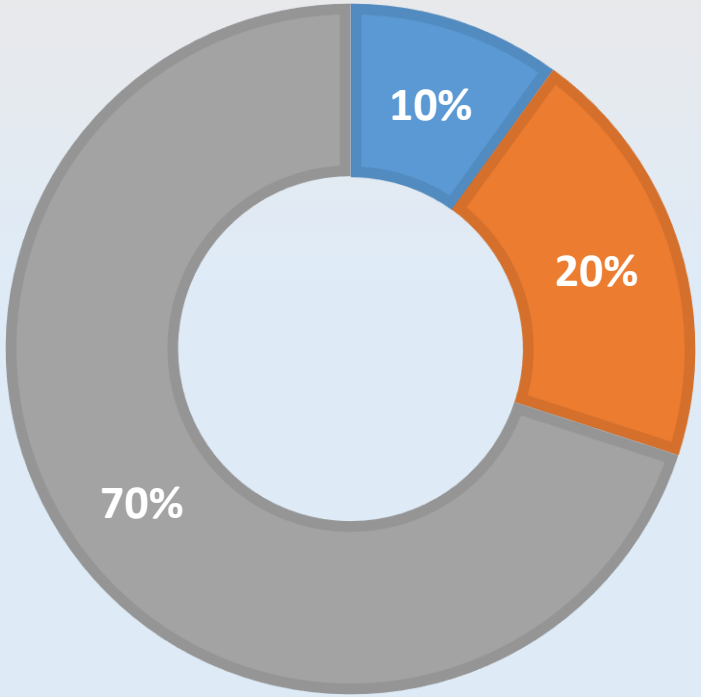
See webpage for more details

Full attendance required for **presentation dates**

GRADING

- Intermediate presentation
- Final presentation
- Project grading (requirements fullfilment + bonus)

You need at least a 4.0 in every part to **pass the seminar**



Every projects defines **requirements** to reach a specific grade and a **potential bonus**

See project definition
+ Customer refinements

Certificate will be for WS 18/19 as most of the tasks are done prior April, 1.

The seminar in a nutshell

You receive access to a GitLab

Infrastructure

You receive access to a test server

We mimic the IRL situation locally in Saarbrücken

You receive API documentations

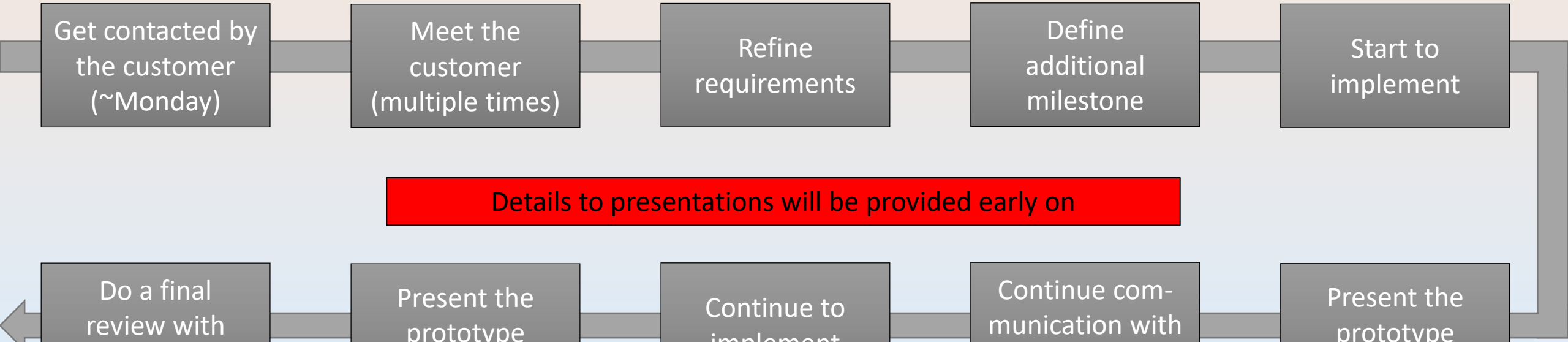
The seminar in a nutshell

Nearly all students could get their first priority pick before the kickoff

If you DO NOT want to participate in the seminar, please leave the room (and say us your name)!

Groups with less than minimum students?

Practical seminar - Project distribution



Details to presentations will be provided early on

March 15, 2019
10am-4pm

What to show?
Decide together with the customer early (!) on

April 5, 2019
10am-4pm

All requirements should be realized

Next steps

- If you did not attend the kickoff you cannot participate in the seminar

- For everyone else: You should have received an e-mail on February, 4 or February, 5 by the customer. **If not, please contact** (pascal.lessel@dfki.de, felix.kosmalla@dfki.de, marco.speicher@dfki.de)

Practical seminar - Project distribution