

Deltares

iMOD International User Day 2022

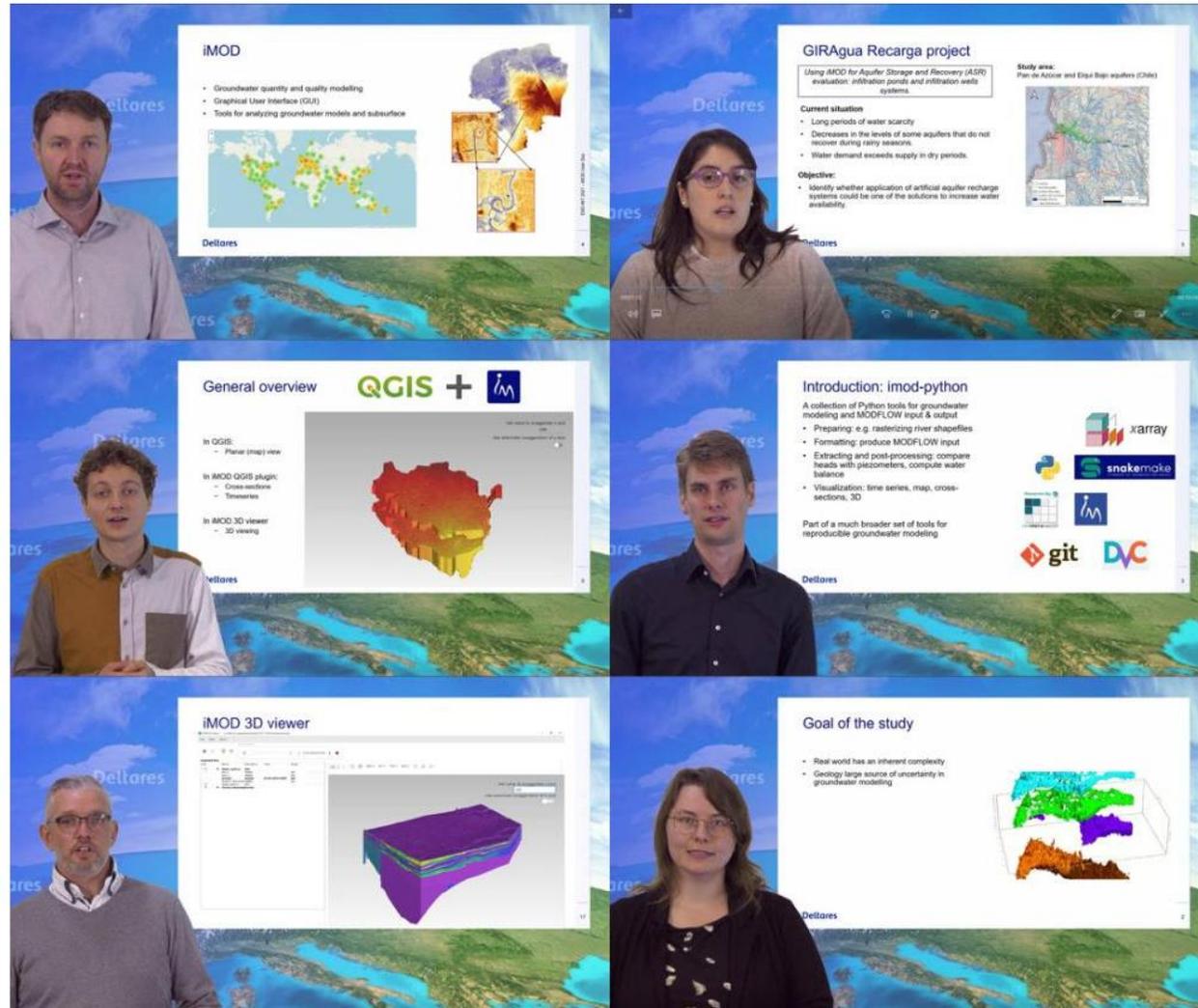
Introduction to the program

Timo Kroon

Tess Davids, Frans Roelofsen, Joeri van Engelen, Huite Bootsma,
Martijn Visser, Hendrik Kok, Hugo van Hintum, Gijs Janssen and
Peter Vermeulen

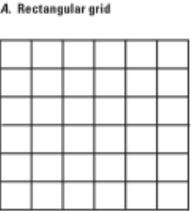
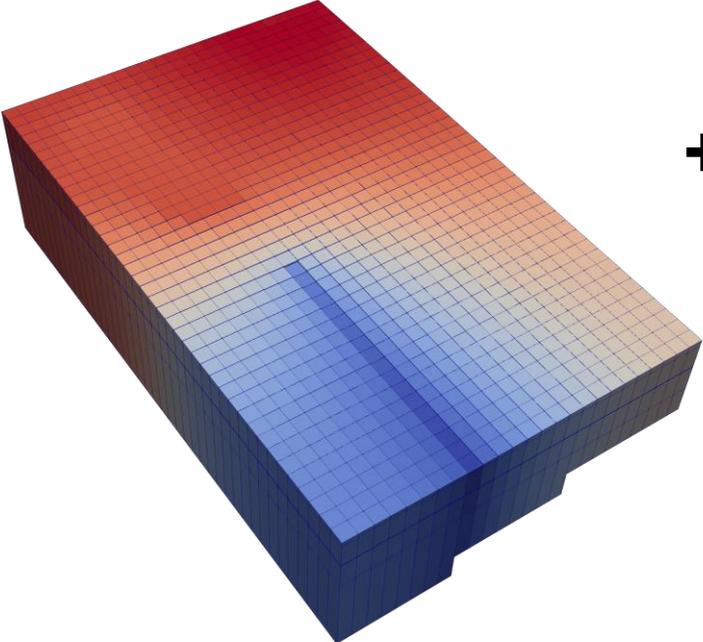
Delft Software Days 2022 11/24/2022

Delft software days: iMOD user day, after 3 years; live again !

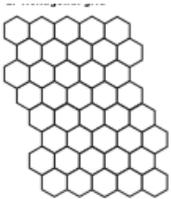
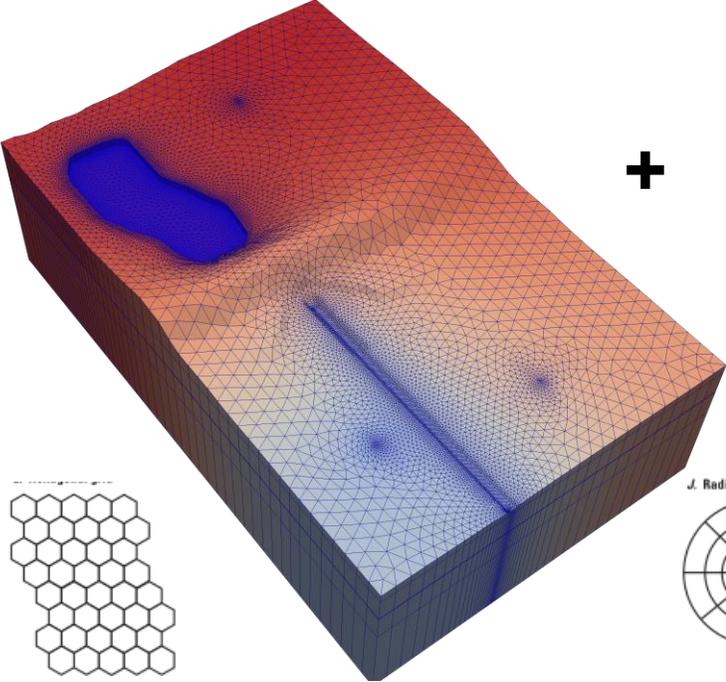


MODFLOW 6: new opportunities to simulate groundwater flow...

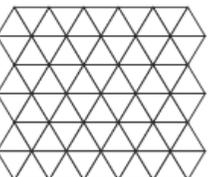
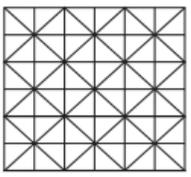
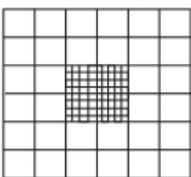
Regular, structured grids (DIS)



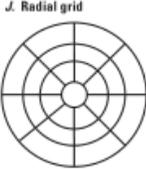
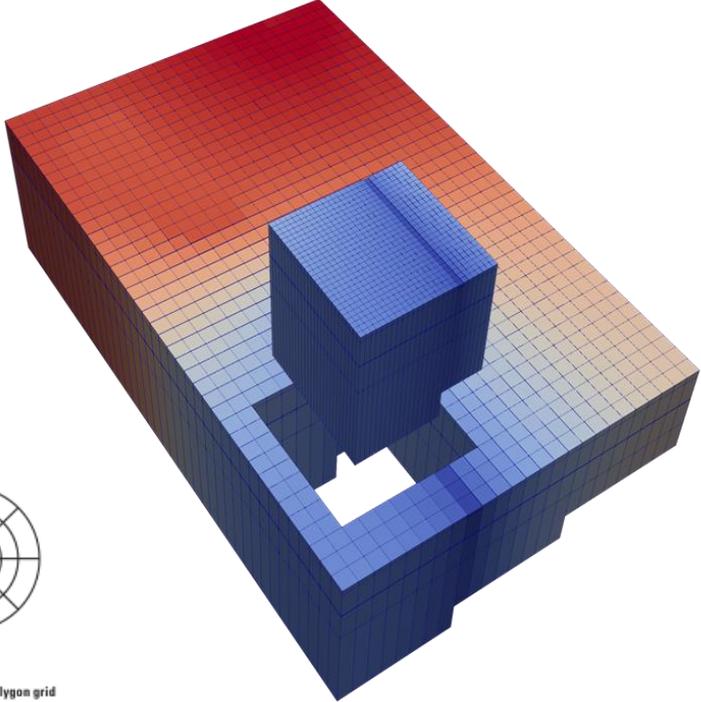
Unstructured (DISV, DISU)



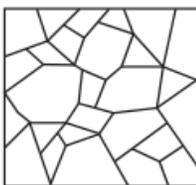
Unstructured grids
H. Rectangular, nested grid



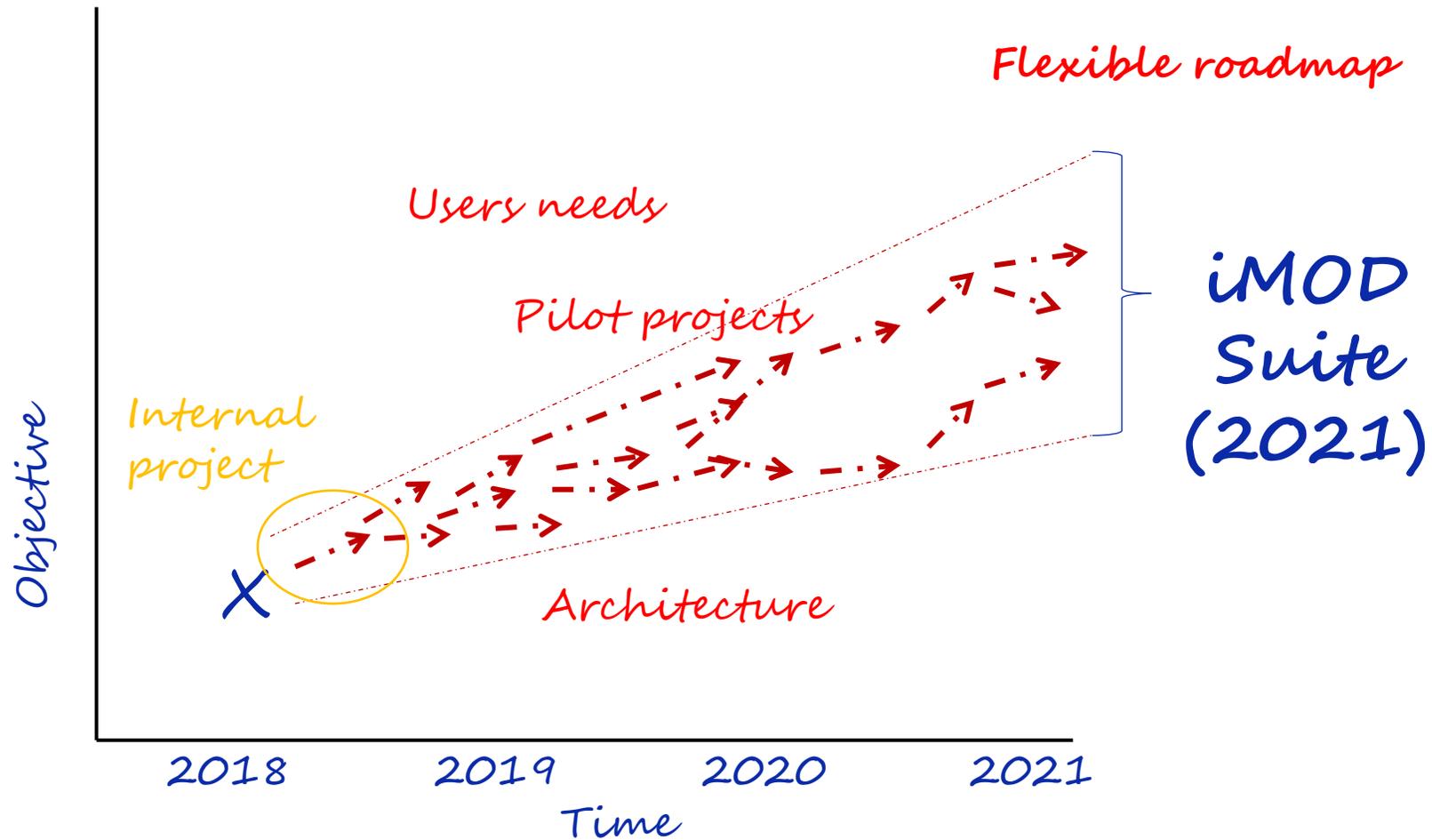
Multi model simulations



M. Irregular polygon grid



2018 – 2021 flexible roadmap towards full use of MODFLOW 6



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Results end of 2021, towards full use MODFLOW 6

1. **iMOD 5** enables structured grids (MODFLOW6 + MF2005)
 2. **iMOD Suite**: tools also for unstructured grids + new userinterface
 3. **Strengthened cooperation with USGS**, since MODFLOW 6
 - development in original computation core MODFLOW6,
 - examples parallelization, XMI-interface for model couplings
- 2022: further development needed, a.o. water quality



Towards a roadmap for the next years, themes foreseen

1. Further **integration** of themes:

- Groundwater & surface water
- Water quantity, water quality, subsidence

2. Further **professionalisation** of tools and data

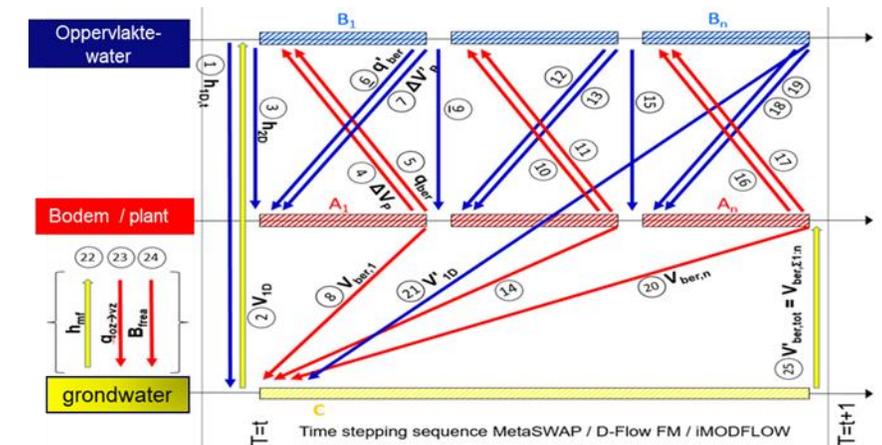
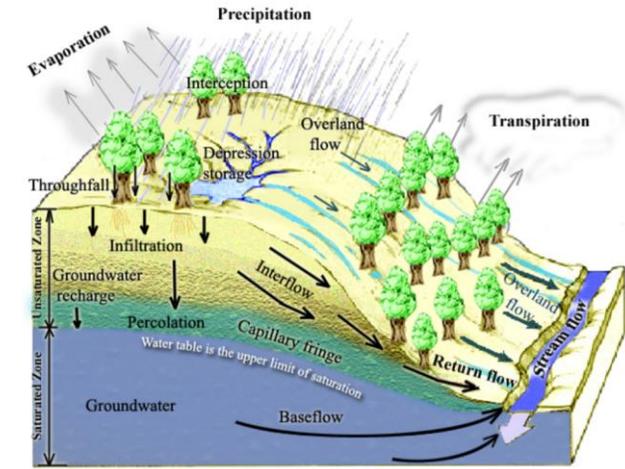
- Reproducible workflows, version control
- Integrated testing
- Easy set-up of models (click and go)

3. Development of concepts for **unsaturated zone**

- different approaches, from light – detailed processes

4. **Digital transition**, incl. use of different concepts

- High resolution, high performance computing
- Other techniques, e.g. machine learning
- Analytical approaches



iMOD team 2022, contributing to the development and maintenance...



Peter Vermeulen



Frans Roelofsen



Hendrik Kok



Gijs Janssen



Martijn Russcher



Tess Davids



Joeri van Engelen



Jarno Verkaik



Betsy Romero



Luit-Jan Sloten



Paul van Walsum



Timo Kroon



Joost Delsman



Huite Bootsma



Julian Hofer

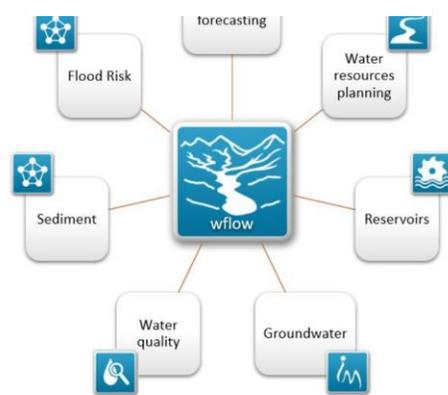


Robert Leander

iMOD-team part of a new, larger hydrology team since 2022 ...



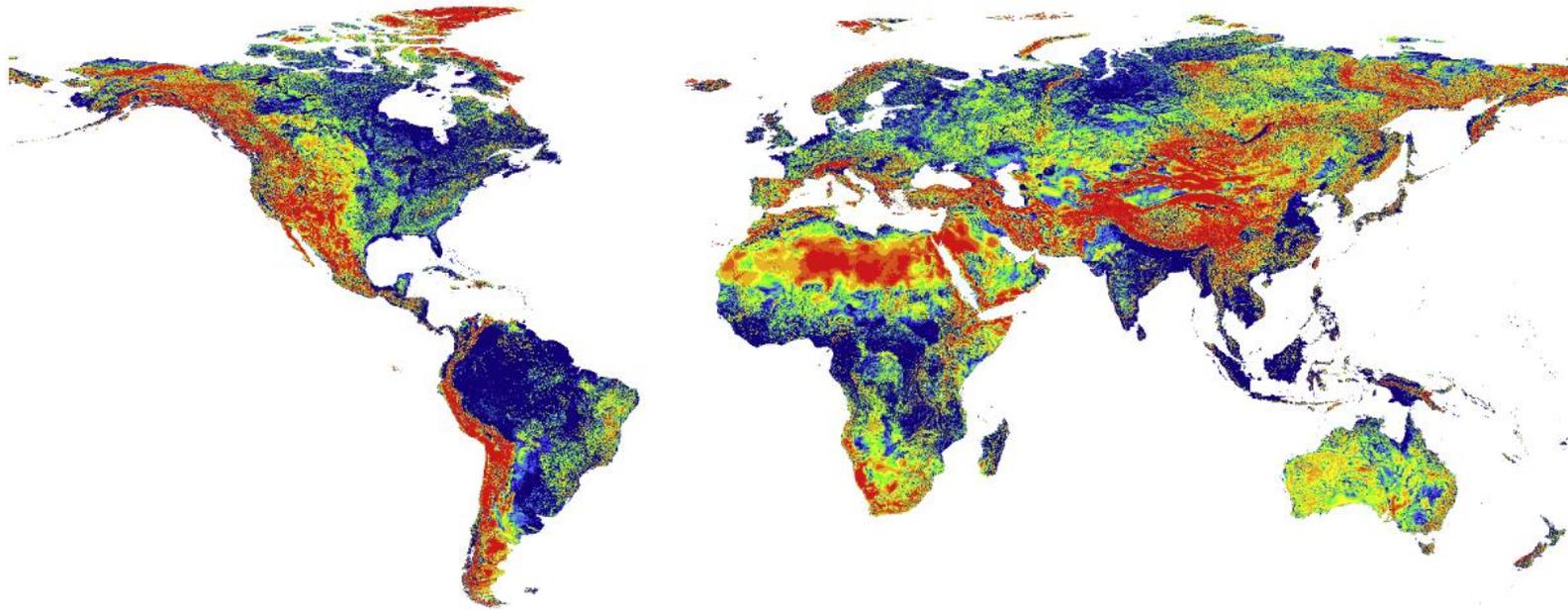
wflow framework



Automated and reproducible model building



Deltares ambition: easily set up a ground water model somewhere in the world ...



and connect to other hydrological concepts if desired ...

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Today's program

- 9:00 - 9:10 **Welcome and introduction to the program** (Timo Kroon)
- 9.10 - 9.40 **Overview of iMOD, and what is new?** (Tess Davids)
- 9.40 - 9.55 Example of a groundwater case in iMOD Suite (Frans Roelofsen)
- 9.55 - 10.15 iMOD Python update (Joeri van Engelen)
- 10:15 - 10:30 Parallel iMOD WQ (Gijs Janssen)

Break

- 10:50 - 12:15 **Carousel of presentations** (Tess Davids)
- iPest (Peter Vemeulen)
- Toolbox unstructured (Huite Bootsma)
- Example XMI: fast calculations within MODFLOW 6 (Hendrik Kok)
- Example iMOD5: flexible drainage (Hugo van Hintum)
- Development of a new surface water module (Martijn Visser)
- Development of analytical elements (Huite Bootsma)

Lunch

- 13.00 – 14.00 **Roadmap discussion** (Tess Davids)
- 14.00 – 16.00 **Hands-on training iMOD Suite** (Joeri van Engelen, Frans Roelofsen)
- 16.00 - 17.30 Closure and drinks

Questions?



Break ...



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Lunch break



BREAK (15 min)

we'll start again at xxx



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Thanks for your attention!

Deltares

In case of Emergency

+31(0)88 335 7112



- Keep calm
- Do not endanger yourself
- Follow the instructions of our safety team
- Go to the assembly point with your host(s)
- Wait for further information



Safety in mind

- 1 Reception
Servicedesk FAM/ICT
- 2 Tower
- 3 Paviljoen
- 4 Tetra

- 5 HydroHall
- 6 Workshops
- 7 Sigma
- 8 Water Soil Flume
- 9 Geohall

- 10 Warehouse
- 11 GeoCentrifuge
- 12 Delta flume
- 13 Datacenter
- 14 Greenhouse



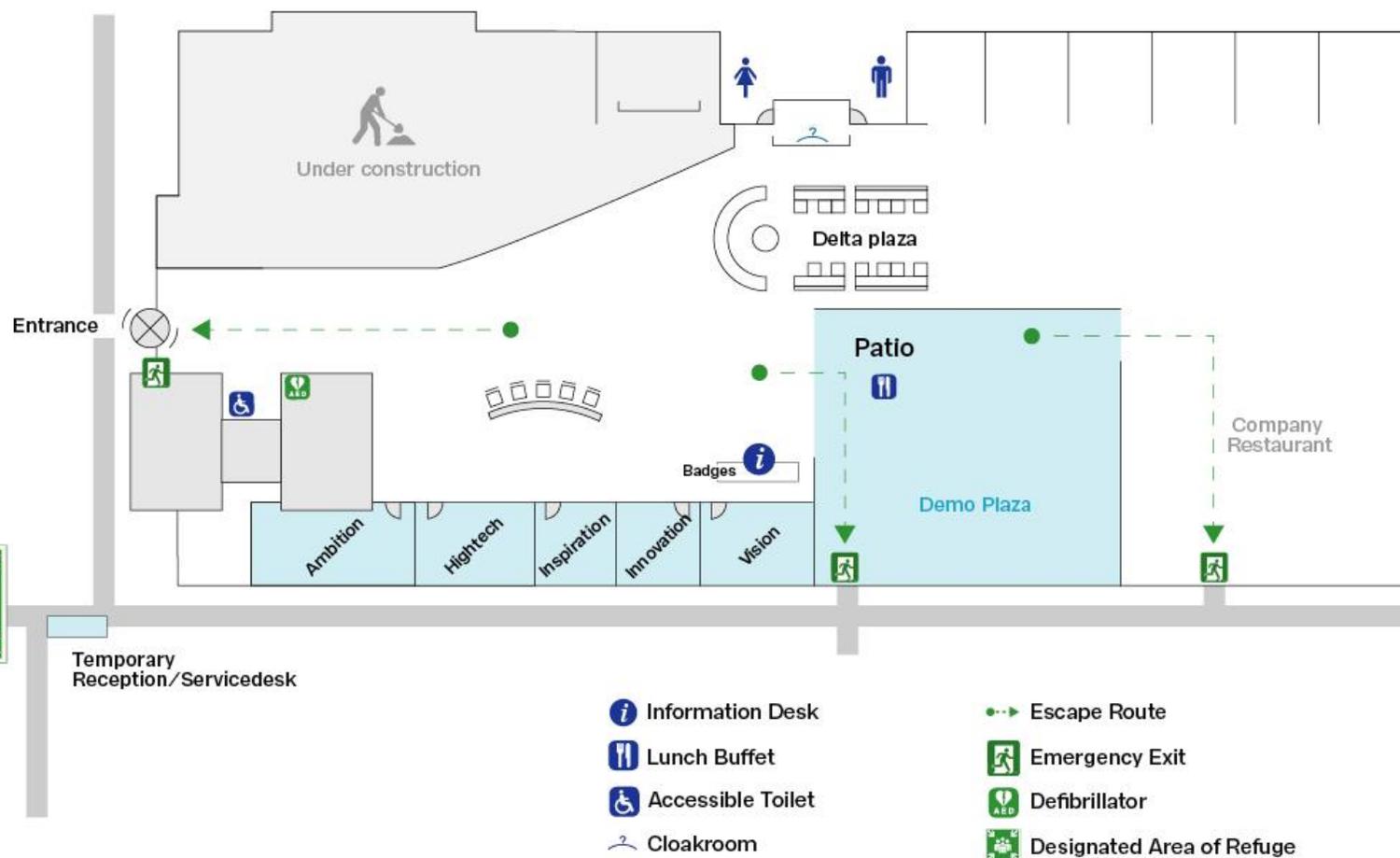
PPE mandatory

In case of Emergency

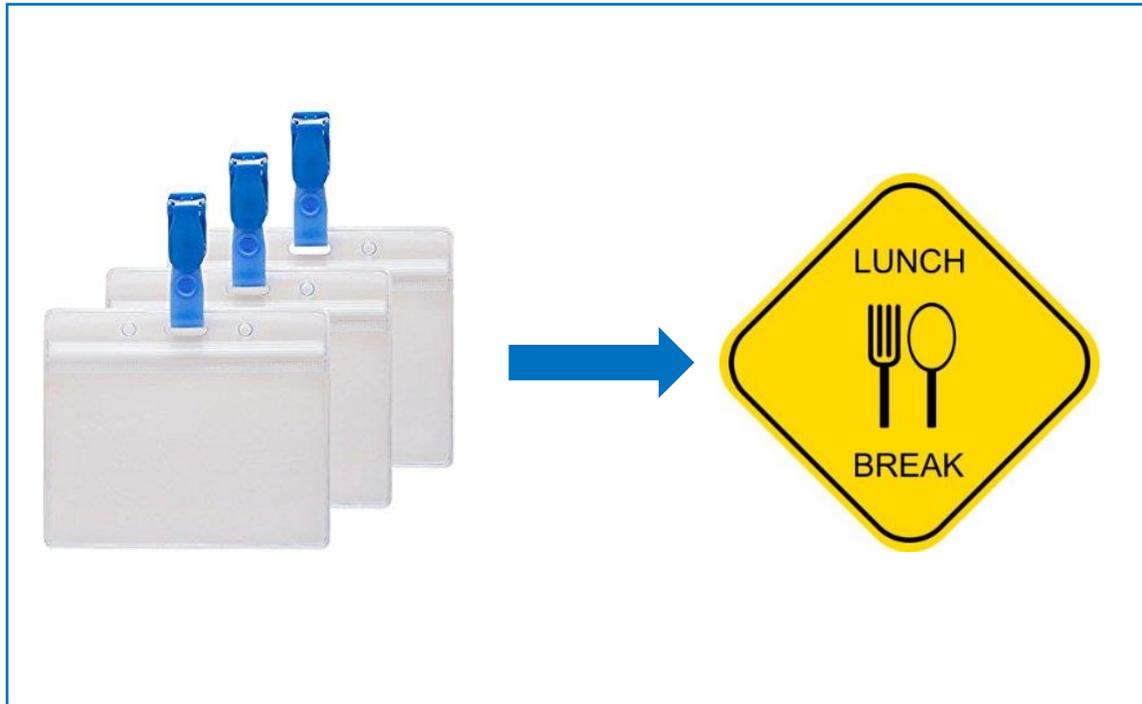
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Logistics



Network

eduroam

Password

.....

