Masterclasses Video Conference

Practicalities, technical info, communicating with students

(original slides from Michael Hauschild)

- **Manuals (the MUST HAVE):**
  - **Moderators manual (THE moderators bible…)**
  - **ModeratorsTwiki (Step-by-step information, files, maps and more…)**
- **Auxiliary material, not mandatory but nice to have (to know):**
  - **CERN Brochure (FAQ on CERN, LHC etc…)**
  - **More Brochures (Press Office collection…)**
  - **CERN guides pages, e.g. Accumulated random facts (E. Bracke)**

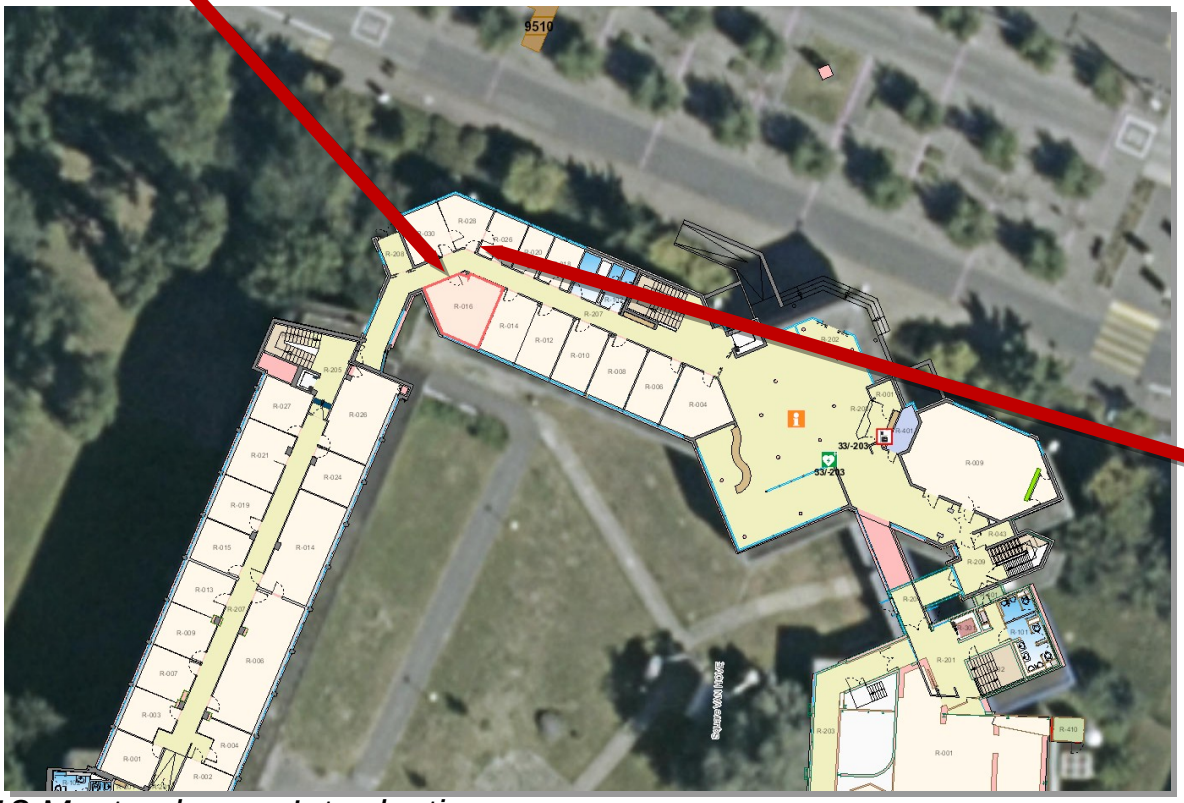
Video Conferences

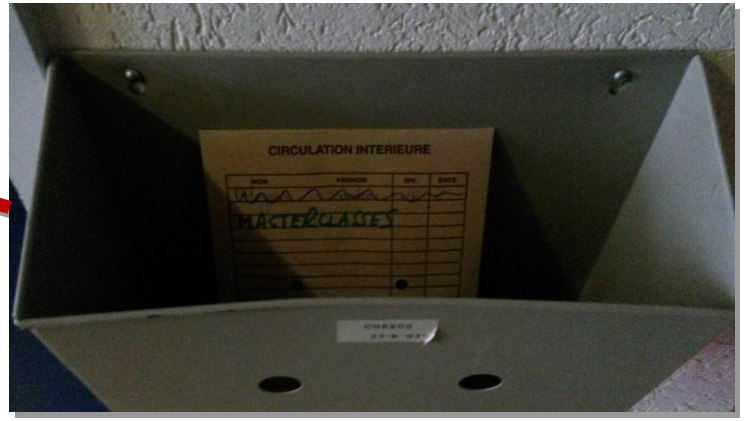
- **Most of the time**
  - **2 Video Conferences are held in parallel: VC1 + VC2**
- **VC1**
  - **always in room 33-R-016**
- **VC2**
  - **always in room 31-S-027**

	Mon, Feb 19	Tue, Feb 20	Wed, Feb 21	Thu, Feb 22	Fri, Feb 23	Sat, Feb 24
topic	VC 1: ATLAS Z	VC 1: ATLAS W	VC 1: ATLAS Z	VC 1: ALICE S.P.	VC 1: ATLAS Z	VC 1: ATLAS Z
	Rome Sapienza	Erlangen	London QMUL	Puebla	Innsbruck	São Tomé e P.
	Marseille	Colmar IPHC	Bologna	Cagliari	Colmar IPHC	Lisbon IST
	Pisa	Hamburg DESY	Vila Real		Prešov	Lodz
	Wuppertal	Bonn	Athens NTU		Braga	
	London QMUL		Trenčín			
topic	VC 2: CMS	VC 2: CMS	VC 2: ALICE S.P.	VC 2: CMS	VC 2: LHCb	
	Florence	Tbilisi GTU	Cagliari	Virovitica	Modena	
	Istanbul, Ozyegin	Trieste	Marseille	Florence	Marseille	
	Split	Zagreb		Osijek	Cagliari	
	Tehran	Pavia		Debrecen	Bologna	
	Qatar	Pozega		Bragança	Pisa	

VC 1 Room

- **VC1: 33-R-016 (Reception)**
  - **key is stored in an envelope marked "MASTERCLASSES" in the mailbox in front of Maureens' office (33-R-030), opposite of 33-R-016. Please, return it there!**





VC 2 Room

- **VC2: 31-S-027**
  - **cellar of IT building (next to the Computing Centre)**
  - **electronic lock**

Electronic locks

- How to open/close rooms with electronic locks in b. 31?
  - need CERN access card to open and to close after VC
  - access card needs to be validated at validation station, e.g. in entrance hall of building 31 (left hand side)
    - instruction sheet on top of card reader, also in EDMS document 1120942
  - validation valid for 30 days, can be renewed

electronic lock

validation station

EDMS - 1120942

Electronic Locks
Card Validation Station

To use the electronic locks you MUST badge on this validation station every 30 DAYS.

Pour utiliser les serrures électroniques vous DEVEZ badger sur cette station de validation tous les 30 JOURS

BLUE – read/write - *BLEU – lecture/écriture*

Present your CERN access card in front of the reader, and it will blink blue while reading/writing – Do not remove card - up to 3-5 seconds.

Présentez votre carte CERN devant le lecteur, il clignote bleu pendant la lecture/écriture – ne pas enlever la carte – jusqu'à 3 secondes

RED or GREEN – read/write completed
ROUGE ou VERT – lecture/écriture terminée

You can now use your badge to open the electronic locks for which you have received authorization[1]

Vous pouvez maintenant utiliser votre badge pour ouvrir les serrures électroniques pour lesquelles vous avez reçu une autorisation[1]

[1] To obtain authorizations, please contact / *pour obtenir des autorisations, contacter :* Locks.Keys@cern.ch or 76658

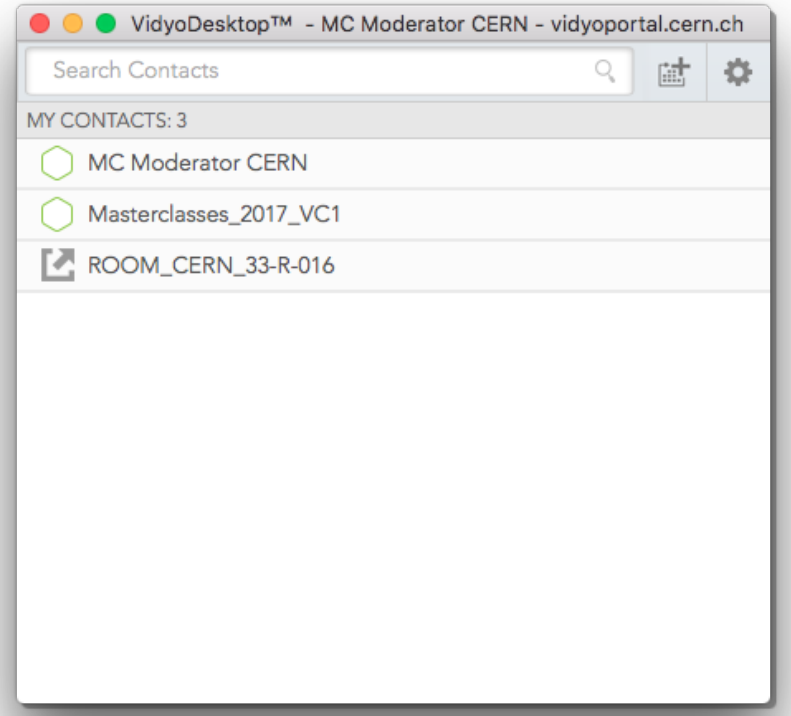
Turn on Monitors/Projectors

- **Beware: The Vidyo equipment is different in the rooms used for Masterclasses!**
- **Carefully read the TWiki and follow the instructions one-by-one how to switch-on the equipment**
  - **VC1: 33-R-016 → (old) Tandberg system**
  - **VC2: 31-S-027 → Vidyo system**
- **Important: make sure that microphones are on**
    - **press button at microphone to switch them on, if needed**
  - **VC1: 33-R-016**
    - **red light at microphone must be on (no light = off)**
  - **VC2: 31-S-027**
    - **green light must be on (red light = off)**

Starting the Video Conference

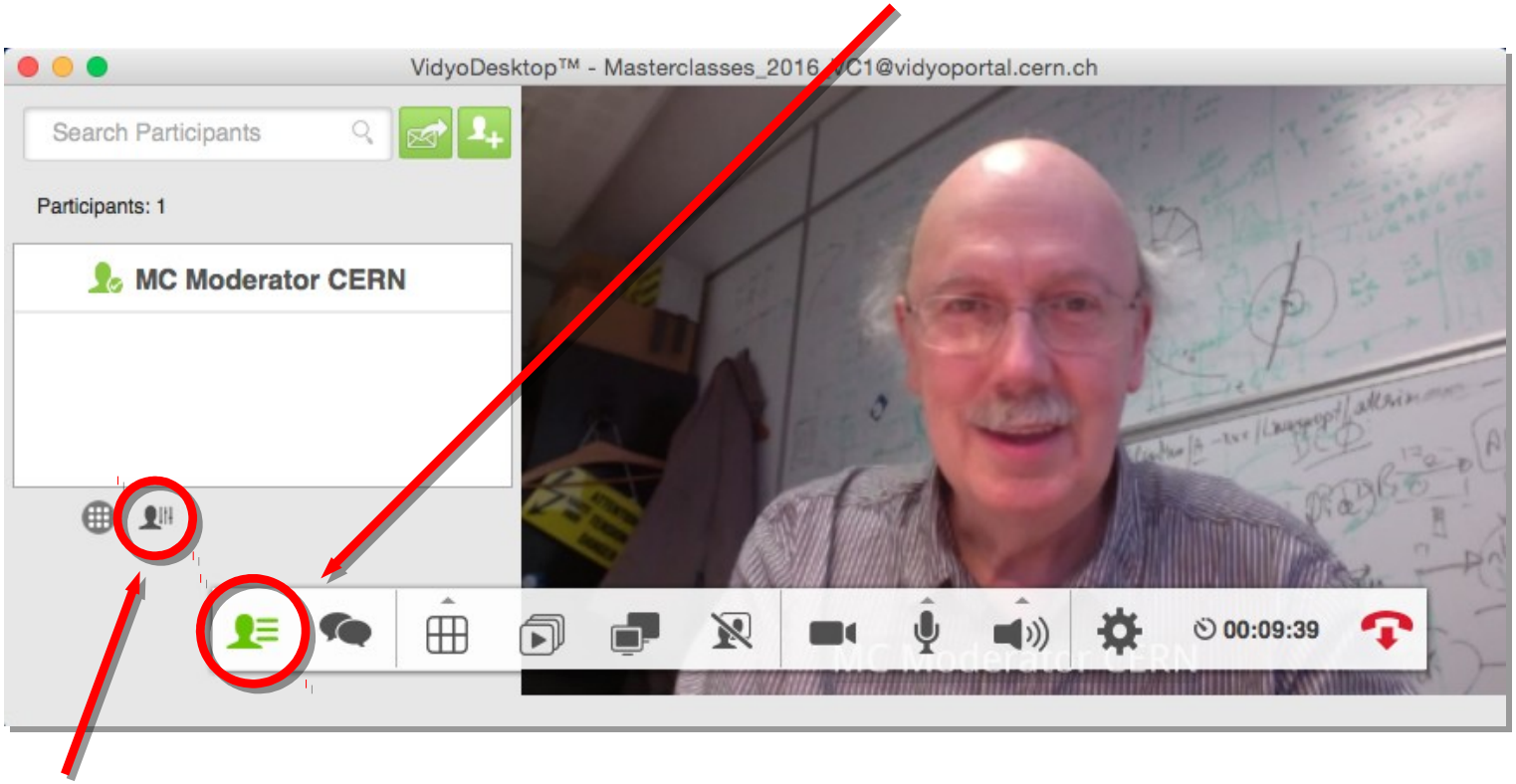
Start the Vidyo Desktop

- **VC1:**
  - **user: mcmod1**
  - **password: mod1mc**
  - **select and connect to "Masterclasses_2018_VC1"**
- **VC2:**
  - **user: mcmod2**
  - **password: mod2mc**
  - **select and connect to "Masterclasses_2018_VC2"**



Starting the Video Conference

- **Connect to the ROOM (part 1)**
  - **if not yet visible in the window, go to left hand side of the task bar (bottom) and click on the little icon "show participants"**

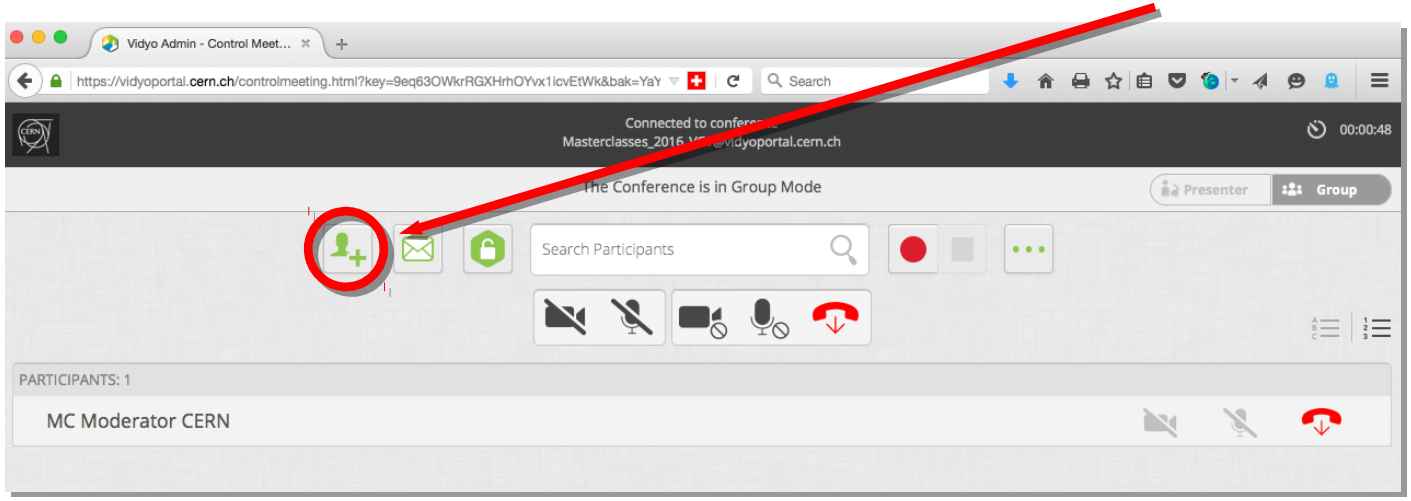


  - **there are two little buttons at the bottom of the participant list, click on the right one "Launch Control Meeting Panel", this will open a new window in a browser**

Starting the Video Conference

Connect to the ROOM (part 2)

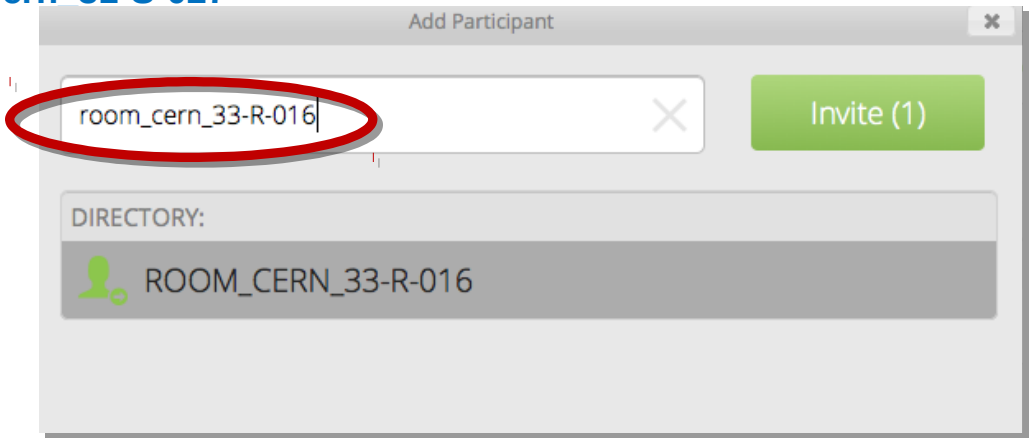
- in the browser window, click on the left hand icon "add participants"



- a new box pops-up, depending where you are, type in the box

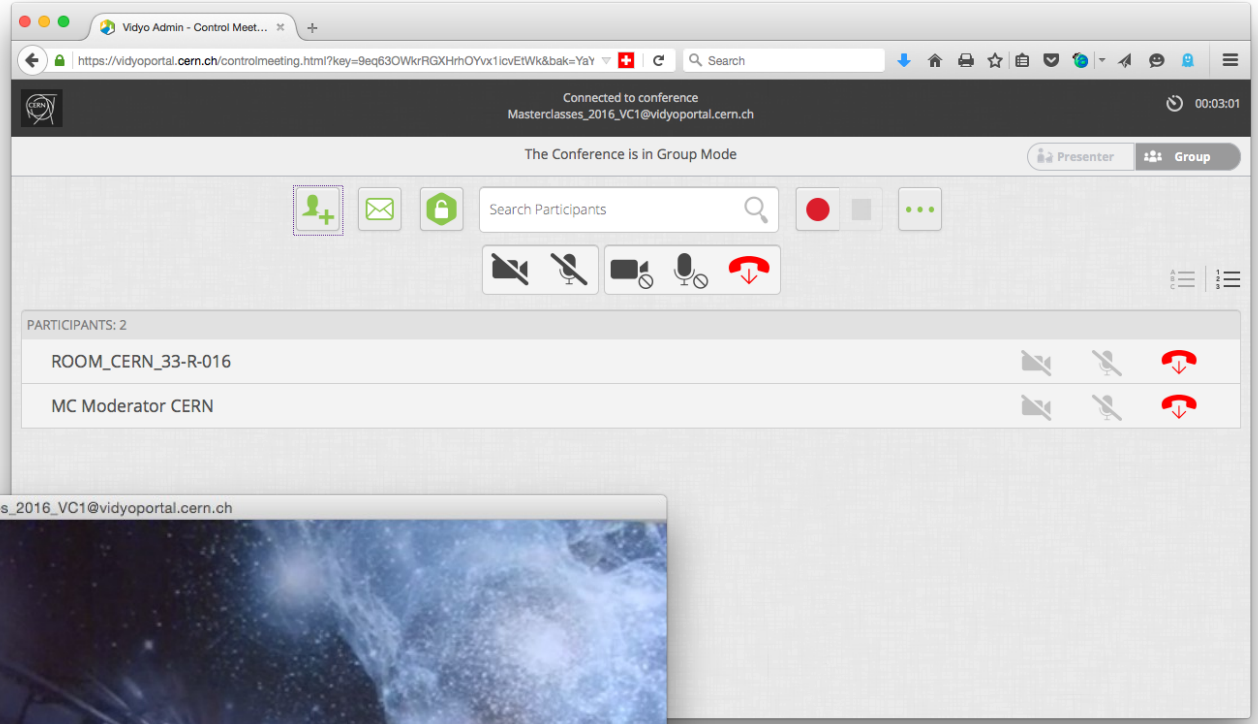
  "room_cern_33-R-016" or "room_cern_31-S-027"

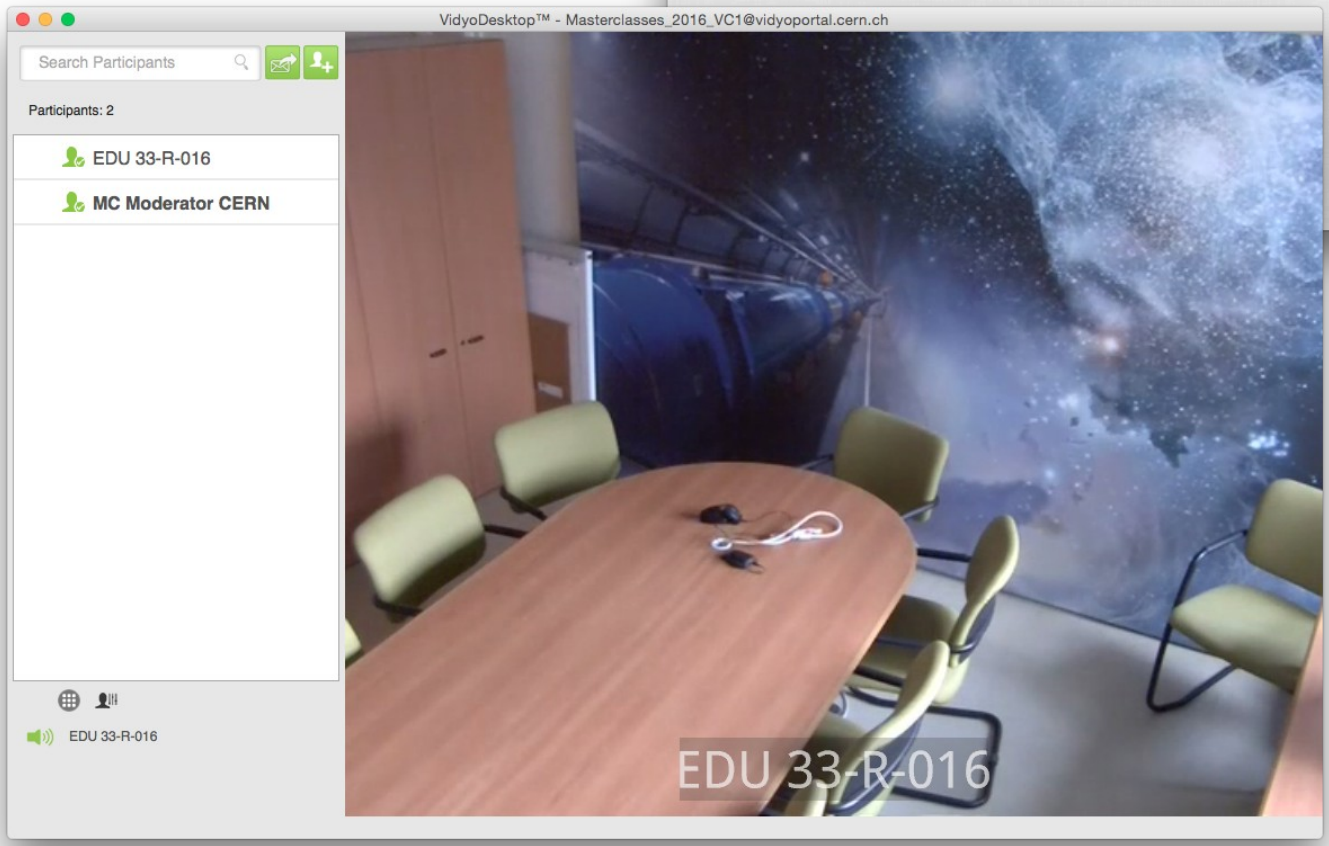
- + click on "Invite"



Starting the Video Conference

- **You're DONE!**
  - **screens should look like these…**

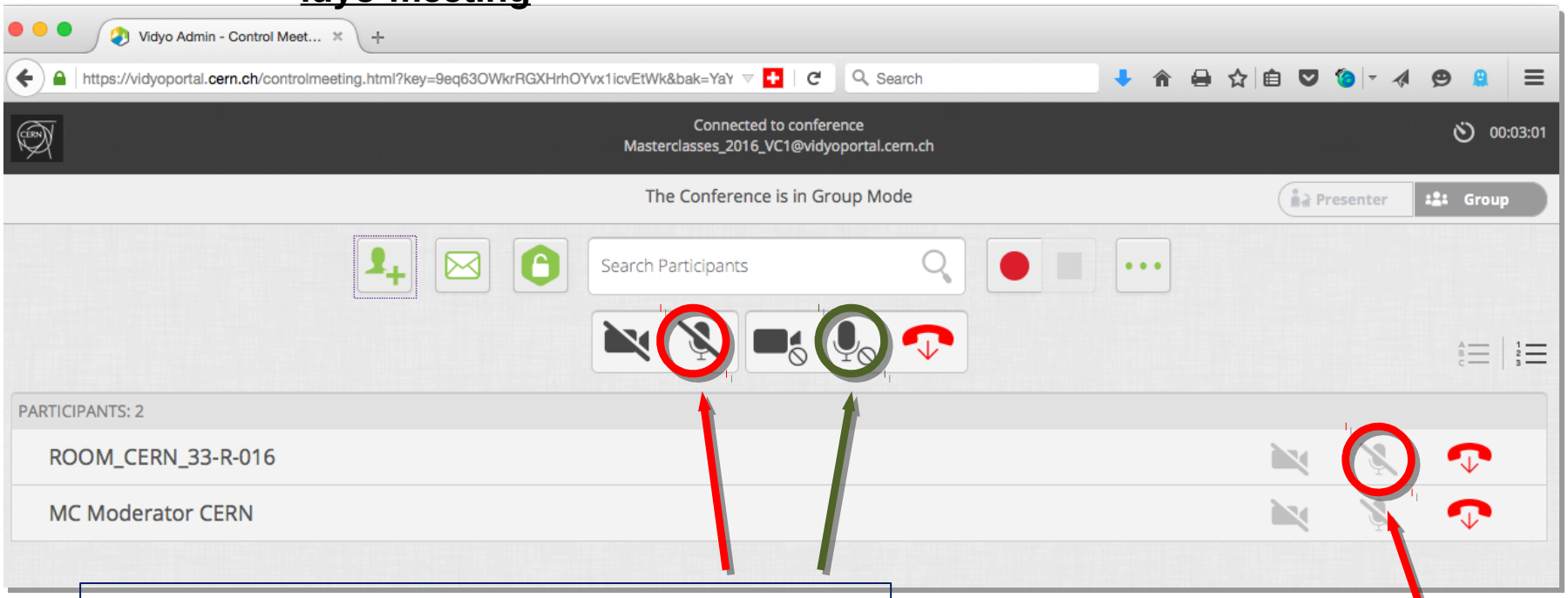




- **Good news:**
  - **setup is sometimes done remotely by the Vidyo support!**

Moderating the Video Conference

- **As a moderator, you are not a simple Vidyo user, but there are more nice technicalities you can use**
  - **full info on this page: http://information-technology.web.cern.ch/services/fe/howto/managers-moderate-vidyo-meeting**

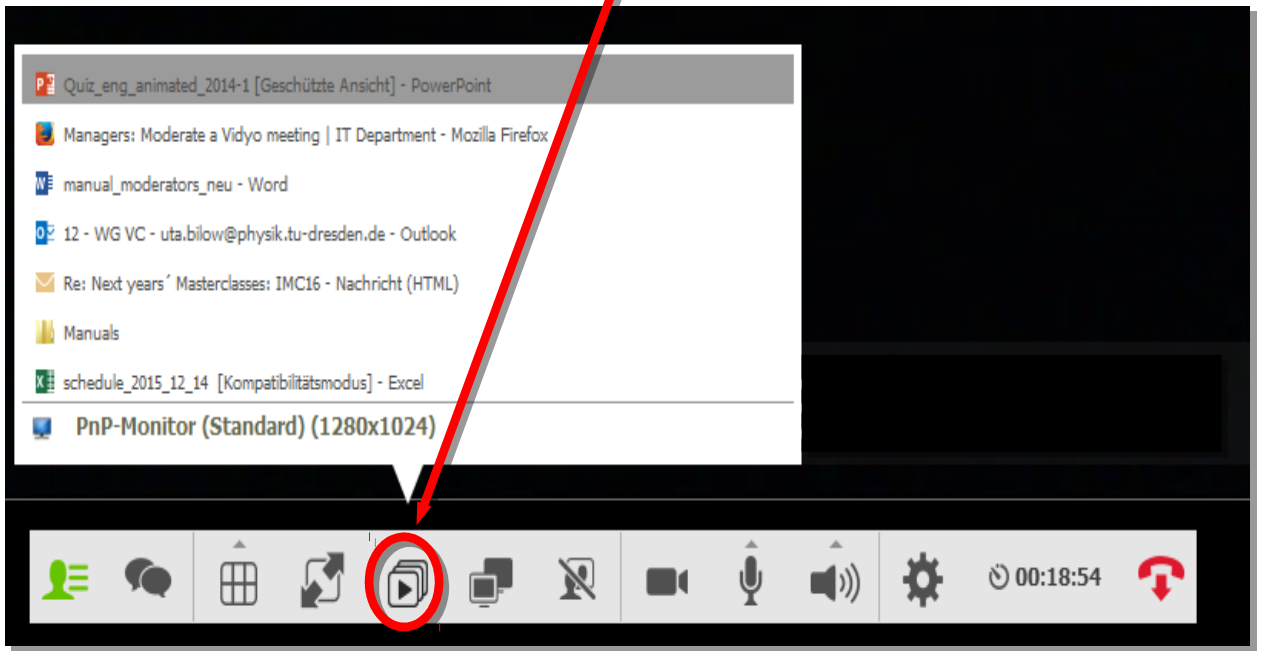


mute ALL participant's microphones **without**/**with** allowing participants to re-enable

mute participant's microphone **without** allowing participant to re-enable

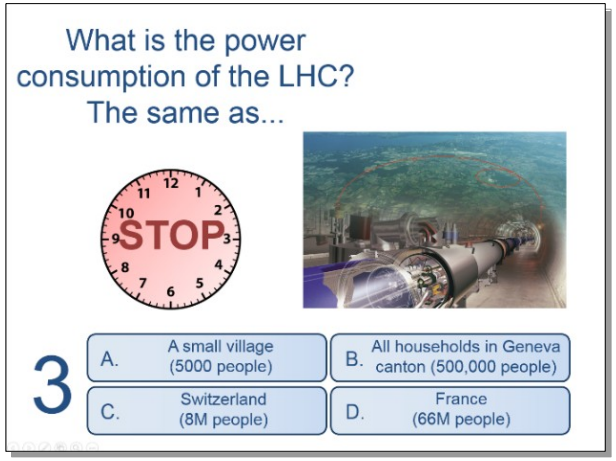
Sharing

- **VC1: 33-R-016**
  - sharing of windows / screen is done by software through Vidyo



- **VC2, Room 1: 31-S-027**
  - button (top row) on Vidyo remote control unit **shares entire screen**

Sharing the Quiz!



- **Quiz is shown in full screen mode**
  - **a bit tricky to share full screen in Vidyo**
  - **students get their answer sheets meanwhile**
- **VC1: 33-R-016**
  - **open the pptx quiz file**
  - **start the slide show (e.g. press F5)**
  - **hold "Alt" key, then press "Tab" key (several times) to switch along the open windows to the Vidyo Desktop without canceling the slide show**
  - **in Vidyo Desktop click the "start sharing" button and select the "Power point slide show" to share**
  - **during the slide show you cannot see the participants**
- **VC2: 31-S-027**
  - **easy to share: buttons on remote control units always share entire screen, also the quiz**

Basic Communication Issues

- **There are two moderators running the show**
  - **both moderators should talk ~equal amounts**
    - **e.g. share the quiz: alternately read the questions/answers**
  - **avoid talking too much to your co-moderator**
    - **a looong dialog between the moderators may disconnect students**
    - **if you feel you've talked too much, hand over to your co-moderator, e.g. “Kate, this seems a perfect question for you”**
  - **if you are new, it might help to have a coffee with your co-moderator**
- **Most of the students are not native English speakers and don't understand and speak English very well**
  - **speak slowly and clear**
  - **avoid using complicated and long sentences**
  - **use simple words (vocabulary of the students might be limited)**
  - **don’t use acronyms, abbreviations, physics slang not common outside of our community, avoid talking “CERNish”**
- **Technical problems...**

Basic Communication Issues

- **Think about messages you want to pass, pick your option:**
  - **CERN, physics and technology is cool and fun**
  - **CERN is open and they can come for visit/internship/as students:**
    - **visits, Open days (next in 2019), virtual visits**
    - **BeamLine for Schools2018 - competition for teams, deadline March 31**
    - **High-school Student Internship (deadline Feb 16, 5 countries each year)**
    - **S'Cool lab summer camp(deadline Feb 5)**
  - **more about CERN: web, Youtube, Instagram, Facebook, open data,...**
  - **we are normal and kind people, not crazy geniuses**
  - **students do not need to be genius if they work hard**
  - **people from their country/city take part in the research**
  - **there are STEM jobs that are awesome (IT, engineering)**

Comments on Q&A

- **Most difficult part: to encourage students to ask questions**
  - they are shy in front of their mates
  - they don't speak English well, cannot express what they want to ask
  - don't know the right words (e.g. in physics questions)
  - for them, the moderators are considered “super-experts”
- **Try to encourage them**
  - go through institute by institute and ask if the students have questions
  - if there are still no questions, ask them what they want to know
    - Would you like to know more about us or about CERN? What about life at CERN?
  - you can ask them some questions (similar to icebreaker questions)
  - sometimes teachers or local physicists ask the questions on behalf of the students (or just translate what students asked in their language)

(Most) Frequently Asked Questions I

(and brief answers)

→ for detailed answers see: Moderators Manual

- **How many people work at CERN? How many different nationalities?**
  - 3000 directly employed by CERN [Fellows, Assoc., Staff], 13000 Users, 100 nationalities
- **How can I come to work at CERN?**
  - Visits, internships, S'cool lab summer camp (2 weeks, school students), BL4S, Summer Students (2-3 months, university stud.),
- **What's the salary of PhD students / CERN staff etc.?**
  - don't give precise answer here, we don't get rich but have fun…
- **What are the costs of the LHC?**
  - LHC machine: 5 BCHF (~4.5 B€) + experiments: 1.5 BCHF (~1.35 B€)
- **What's the power consumption of the LHC?**
  - CERN total (with pre-accelerators etc.): 180 MW (= 180'000 households in Canton GE)
- **How much Helium is needed to cool the LHC magnets and what's their temperature?**
  - 120 tons, 1.9 K = - 271.25 ^{o}C (universe: 2.7 K, cosmic microwave background radiation)

(Most) Frequently Asked Questions II

(and brief answers)

- **What's the speed of protons in the LHC? Are they travelling with light speed?**
  - **99.999999% (at 6.5 TeV/beam) = just 3 m/s (10.8 km/h) slower than light speed**
- **Where do the protons / lead ions in the LHC originate from?**
  - **Protons from an ordinary hydrogen bottle, lead ions from a 500 ^{o}C hot oven**
- **The Physics Nobel Prize 2013 was given to François Englert and Peter Higgs. What did they do?**
  - **Invented concept, how elementary particles can get mass and become heavy.**
- **Why CERN / the LHC experiments didn't get the Nobel Prize?**
  - **Physics Nobel Prize can go to a maximum of 3 people for their individual work.**
- **Can the LHC create black holes that destroy the earth?**
  - **NO! cosmic rays are hitting the earth since >4 B years, with energies up to 1000x > LHC**
- **Why is the LHC sometimes stopped few 2 years? What was done in that time?**
  - **To make the LHC fit for higher energy and collision rates and improve the detectors.**

(Most) Frequently Asked Questions III

(and brief answers)

- **Is the LHC / are the experiments running right now?**
  - **In winter shutdown right now, will restart in beginning of April, first collisions by end of April.**
- **Why do you continue running? Couldn't you stop after the discovery of the Higgs?**
  - **More data needed to further investigate the Higgs properties. Higher LHC energy also gives hope to discover even more new particles.**
- **How long the LHC will continue running? Are there any plans after the LHC?**
  - **LHC runs until ~2035, only 2% of expected data taken so far [60 fb^{-1} out of 3000 fb^{-1}]. Studies on CLIC and FCC ongoing, to be reviewed in 2019/20 [European Strategy of Particle Physics] together with results from LHC.**
- **I've heard on some anomaly that was found in the LHC data last year. Was this the discovery of a new particle?**
  - **Both ATLAS and CMS saw in 2015 a slight [unexpected] excess at the so-called invariant mass of 2 photons around 750 GeV. New discovery, if true… With more data in 2016, no excess anymore, no discovery, statistical fluctuation.**