

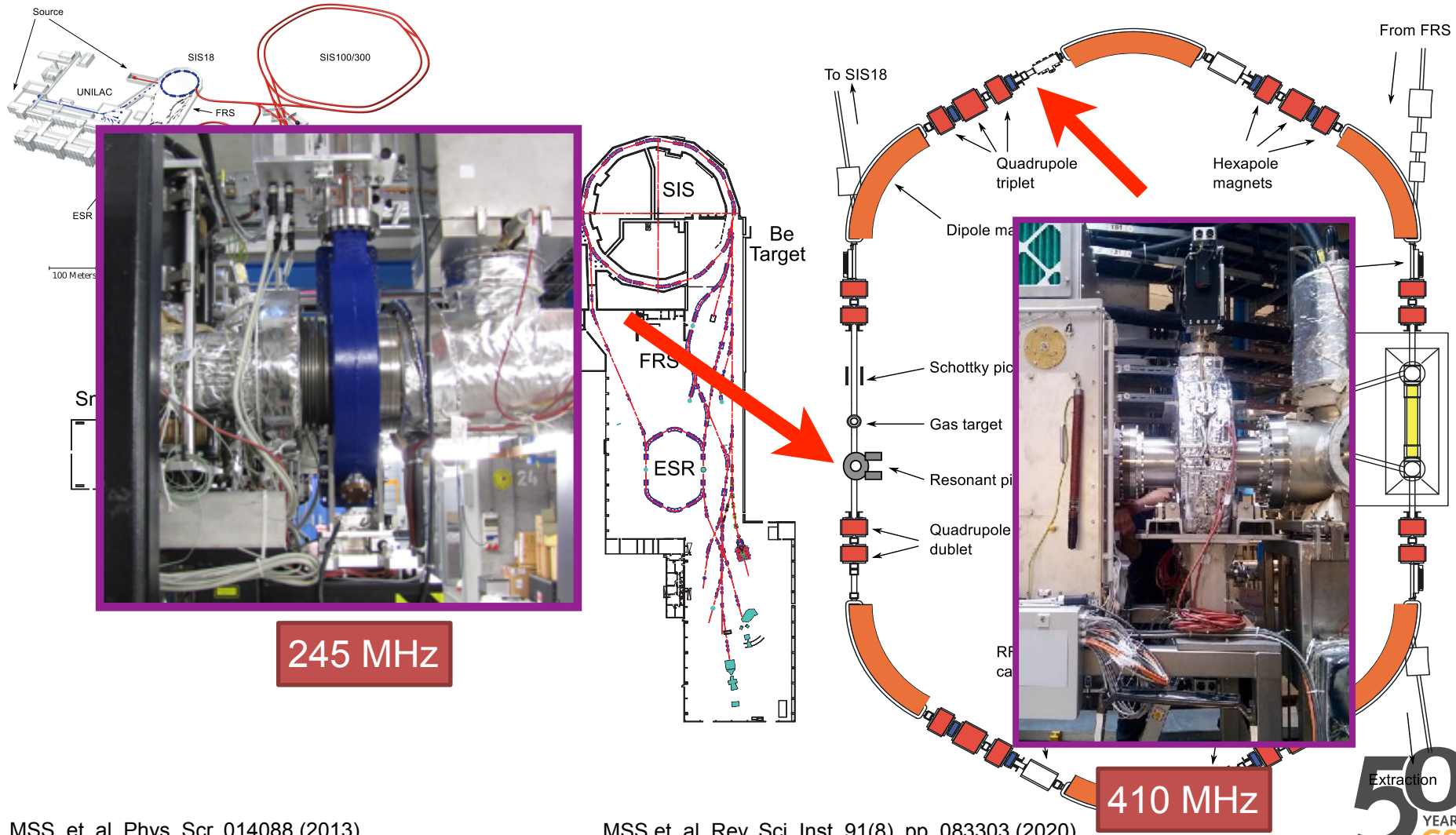


50  
YEARS  
GSI

# E143 Preparation

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2021-04-27, GSI

# Schottky detectors



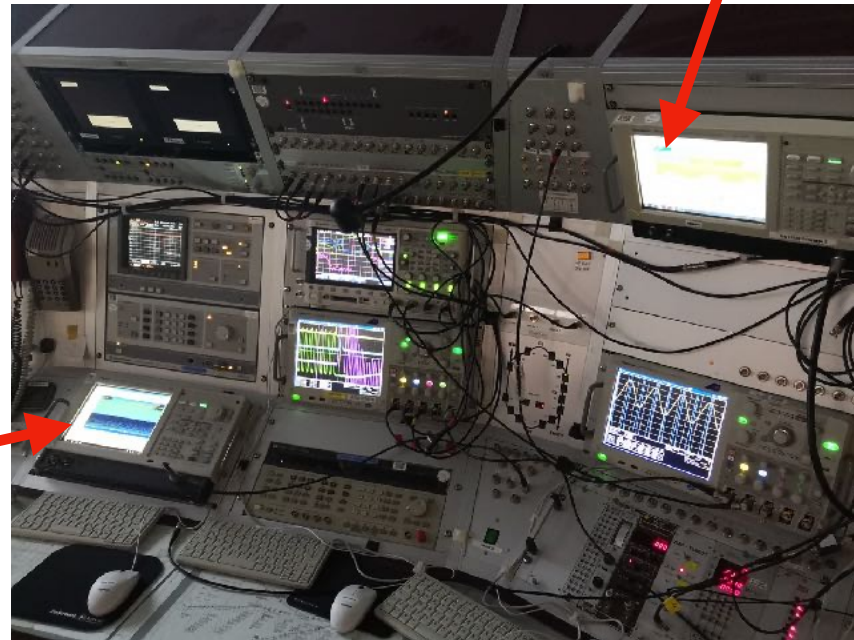
MSS et. al. Phys. Scr. 014088 (2013)

MSS et. al. Rev. Sci. Instr. 91(8), pp. 083303 (2020)

# Frontend DAQ

- “Narrowband”
- Using “big” and fast spectrum analysers
- Main recording machine is 245 resonator
- 410 MHz analyser records as backup
- File size: approx. 30 MB

410 MHz



245 MHz

# Monitor DAQ

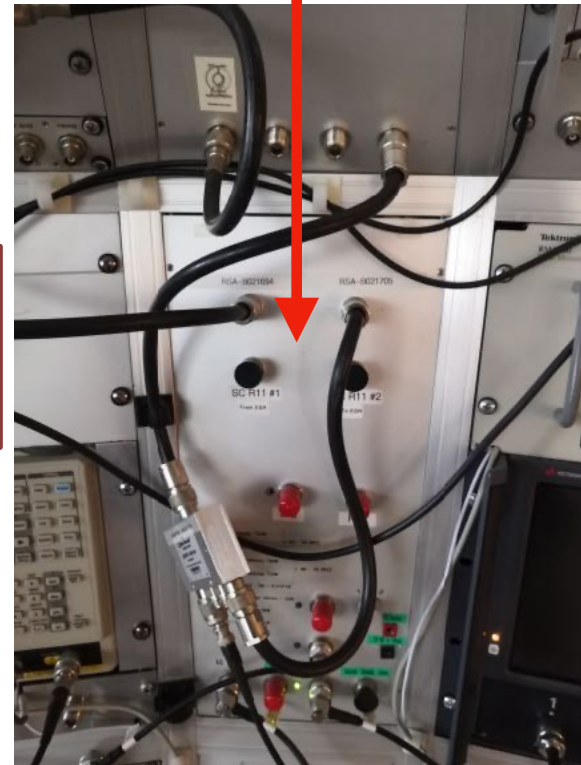
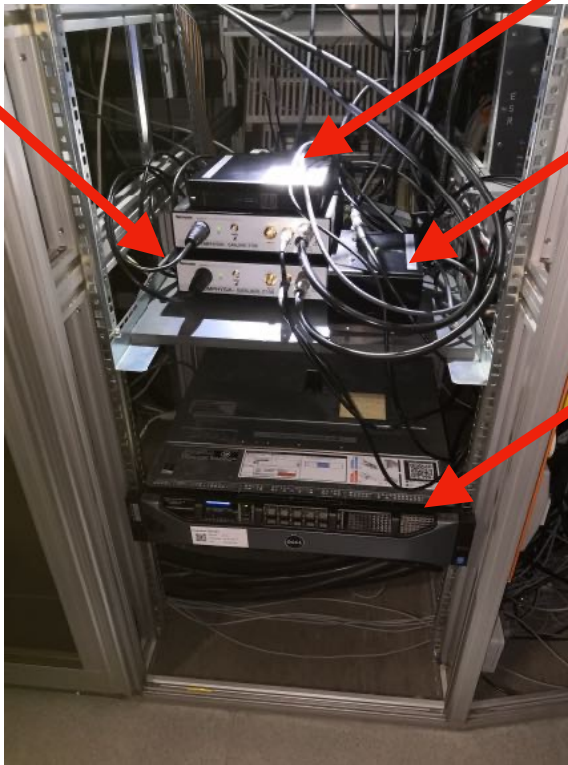
Spectrum Analyzers

Monitor Computer

new cabling

Trigger

Gateway



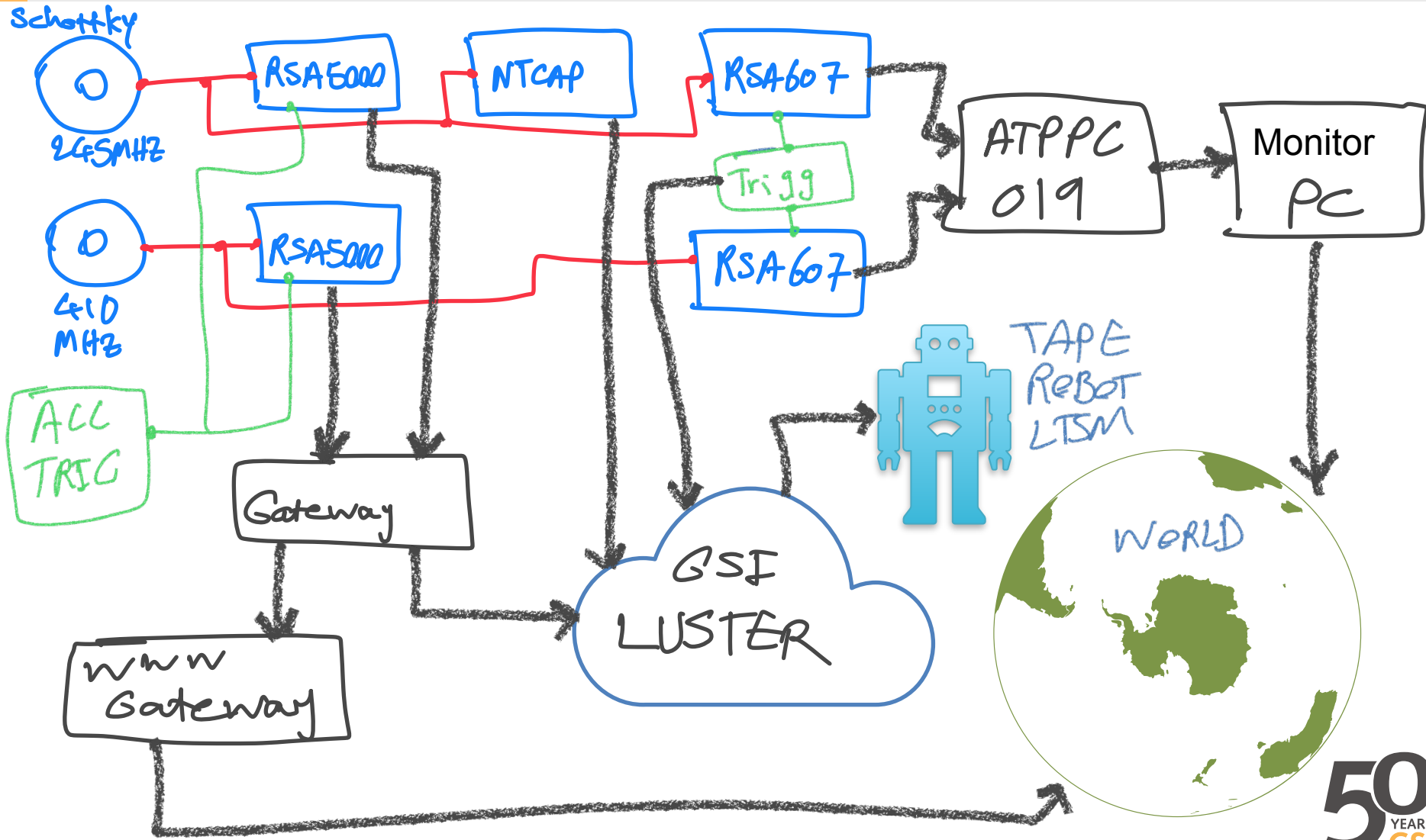
# Backend DAQ

- Broadband recording
- Continuous
- Connected to 245 MHz Schottky only
- Date size: approx. 4GB for 130s

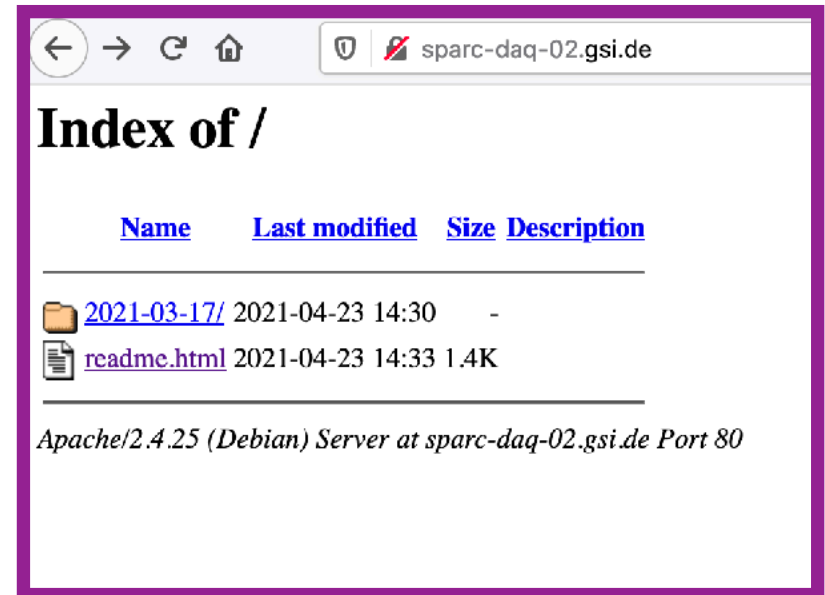


NTCAP system

# Topology of signal flow



- There is a new external server (only http):
  - <http://sparc-daq-02.gsi.de/e143>
- (user: e143, PW: XXXX)
- Storage only about 600 GB
- Data can be directly copied to the WWW server through the gateway computer
- Right-click to download files, or use smart scripts (python 🤪, curl, wget) if you like

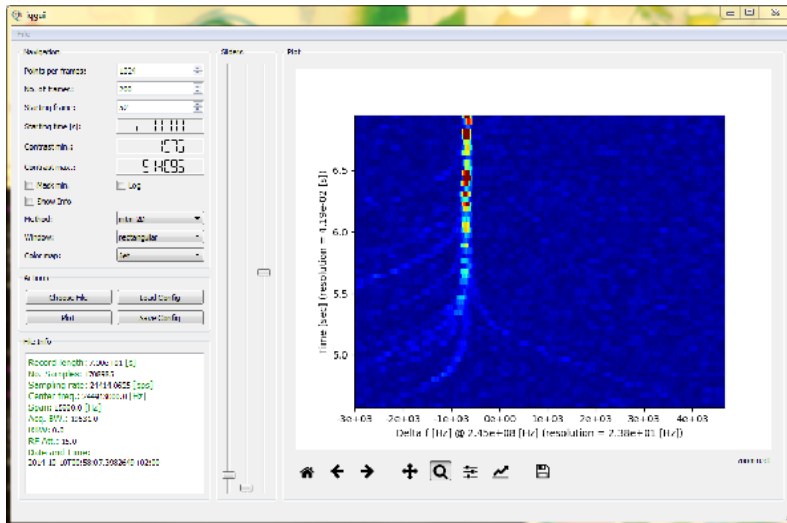


- Python based framework: IQTOOLS and IQGUI
  - <https://github.com/xaratustrah/iqtools>
  - <https://github.com/xaratustrah/iqgui>
- Easy installation
  - platform independent but linux / mac is recommended for command prompt
  - Anaconda or WinPython
  - can be used as a library
  - Command prompt version can be used to make quick spectra
- Installation / Running How-To:
  - <https://github.com/xaratustrah/iqtools#install--uninstall>
  - <https://github.com/xaratustrah/iqgui#installation-and-usage>





- Run as EXE
  - download EXE for Windows form the GitHub page, release section



or

- Install Python:
  - WinPython for Windows
  - Anaconda for Lin+Mac
- Download IQTools
  - and dependencies
  - run in command line:
    - `python iqtools --lframes 1024 --nframes 200 --spec filename.tiq`
- Download IQGUI
  - run GUI version

More flexibility

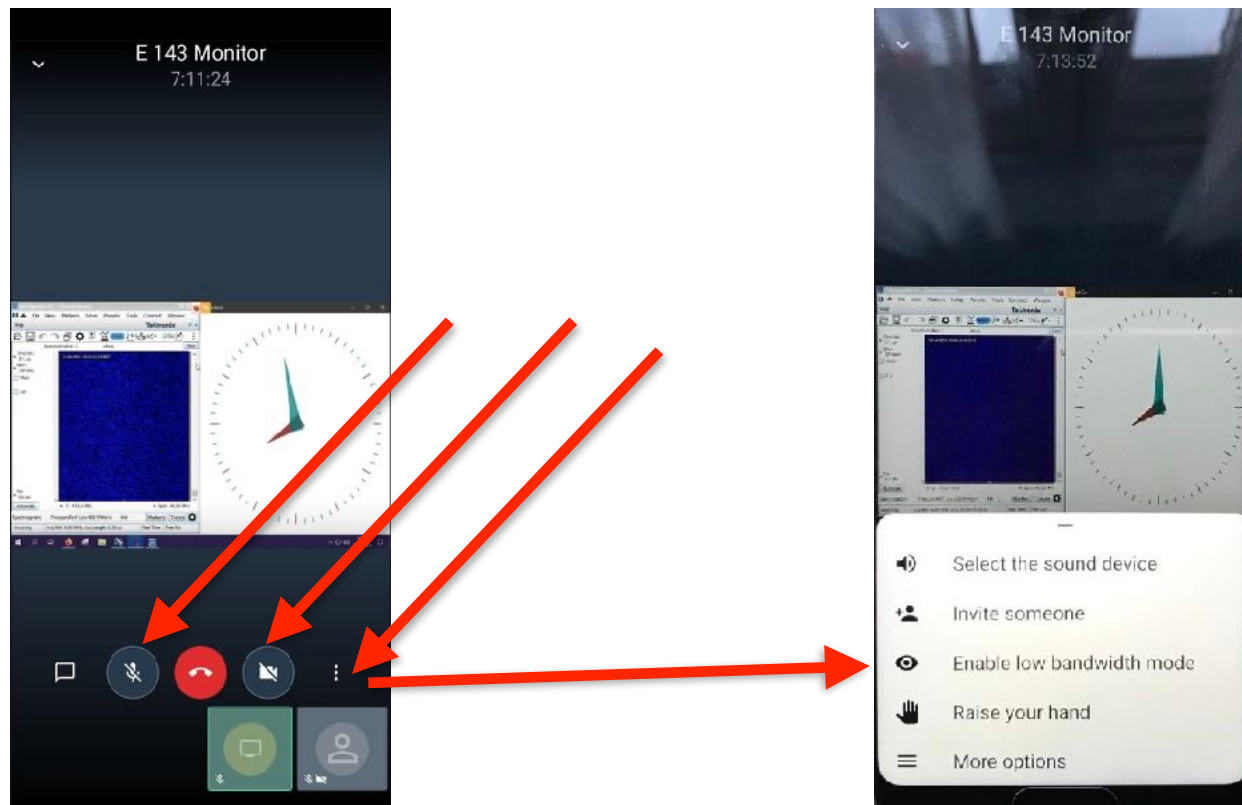
- For very advanced users:
  - There is also a possibility to use Tektronix own software
    - Free, closed source, but very old (does not support Windows 10)
      - RSAVu
    - Commercial:
      - SignalVu
      - ~ 1k€ per License
  - Or load data on your own spectrum analysers
    - use “replay” or “load” function to see the spectra

- ELOG is the **primary** information container for the experiment
  - visible worldwide
  - There is an exp account for everyone
    - (user: e143, PW: XXXX)
  - <https://elog.gsi.de/esr/E143/>
- There is a new WIKI page for this experiment and future experiments more for **static data**
  - [https://wiki.gsi.de/ESR\\_EXP/WebHome](https://wiki.gsi.de/ESR_EXP/WebHome)
  - visible worldwide
  - only registered GSI users can write

- Monitor DAQs need to be accessed through remote desktop connection
  - The computer doing that runs JITSI
    - Server address will be announced
    - Just passive viewing is possible
  - Each time setting is done on the RSA computer, RDC takes over, so the other connection is lost
    - We start with a very general setting
    - Then tune to stable operation has been reached
- Works for hours has been tested
  - Sometimes browser crashes
    - restart needed



- Free open spruce software
- Android, iPad, iPhone, Browser ...
- To save bandwidth: turn off video and microphone
  - also enable **low bandwidth mode**



- Alternatively a ZOOM session can be made
  - We have applied for a ZOOM license for the experiment account
  - DESPEC may kindly provide us with their solution for the time during the experiment
  - Server address will be announced

- For LTSM data should be copied to LUSTRE which is on the Green Cube
- There is a direct connection to GSI Lustre
  - (Alternatively it is possible to use SSHFS connection)
- Data copies:
  - Data is created on big spectrum analysers
  - One copy on WWW server
  - One copy on gateway → LUSTRE
    - Copy on spectrum analysers and older days on WWW can be **deleted**
  - After experiment copy to LTSM

- There is a telegram group every one can join:
  - Group address will be announced
- No tel number will not be shared
- many other features





- ~~Finish external server~~
- ~~check trigger concept (ACC or Trigger box)~~
- ~~Copy script from Gateway to WWW-server~~
- ~~Setup Jitsi → will be done ad hoc~~
- ~~Need help with WIKI → thanks to R. Chen~~
- Automatic script from analysers to Linux
- Make space on NTCAP computer and connect the cables → thanks to R. Chen
- 245 MHz resonator spectrum analyser needs connection to ACC LAN → thanks to R. Joseph

Thank you!

