

# HEL and BGC

Open vacuum questions

BGC collaboration meeting  
CERN, 30.03.2022, Marton Ady

# Vacuum group contacts so far

## Beam Vacuum Operations (BVO)

- Giuseppe Bregliozzi
- Chiara Pasquino
- Pablo Prieto
- Eric Page
  
- *Approve pumps, gauges, operational procedures*
- *Make sure instrument is LHC-compatible*
- *Assume vacuum responsibility after installation*

## Interlocks and Controls (ICM)

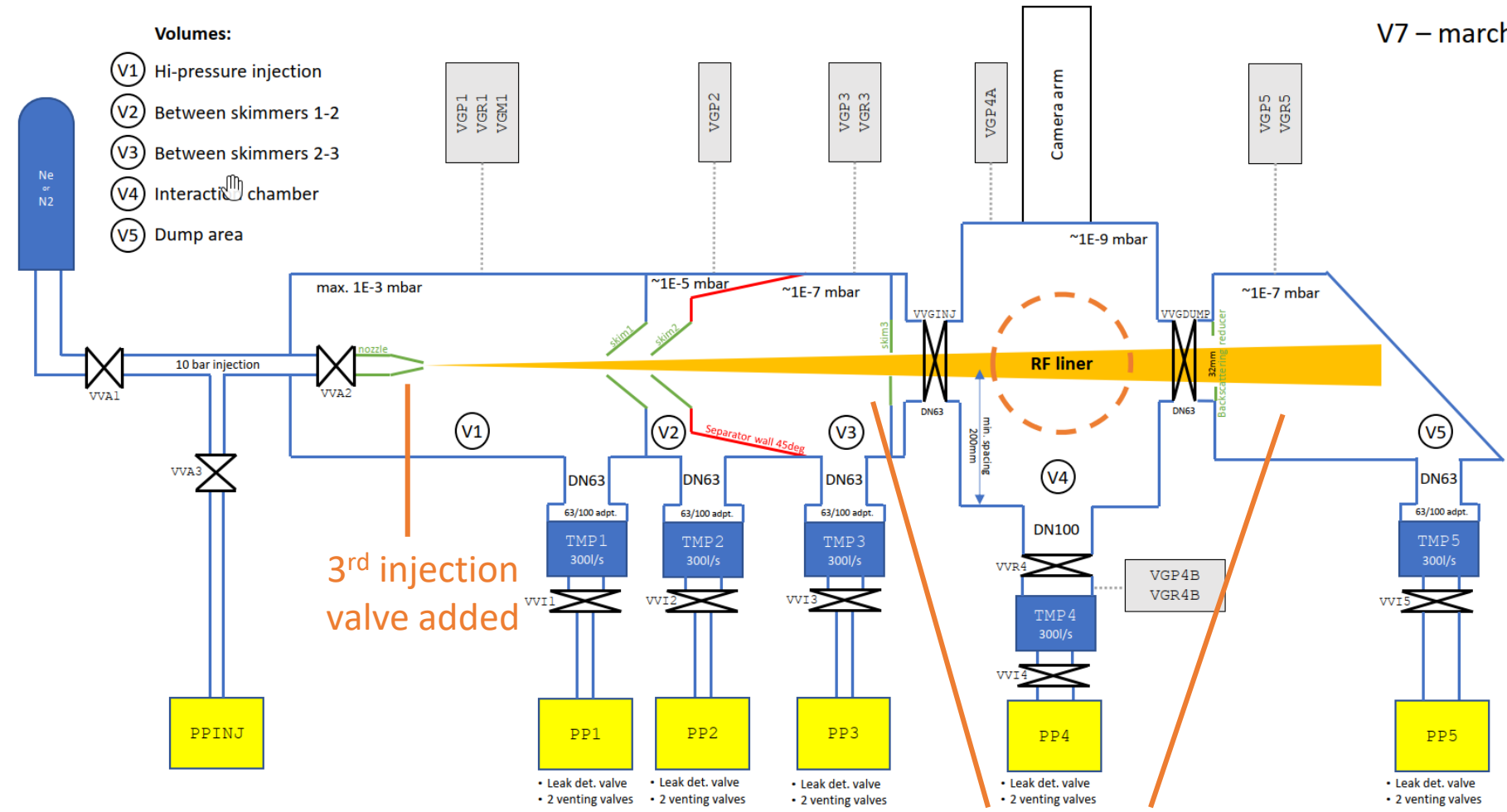
- Gregory Pigny
- Lampros Zygaropoulos
- Nikolaos Chatzigeorgiou
  
- *Design gauges, PLCs and cabling*
- *Design SCADA interface*
- *Implement interlock logic*
- *Automate operations*

## Simulations (VSM)

- Marton Ady (2016-2019)
- Noah Jens (2020-2021)
- Cristina Sequeiro (2022-)
  
- *Predict pressure and density based on CAD design*
- *Propose changes and optimize*

# Beam vacuum operations

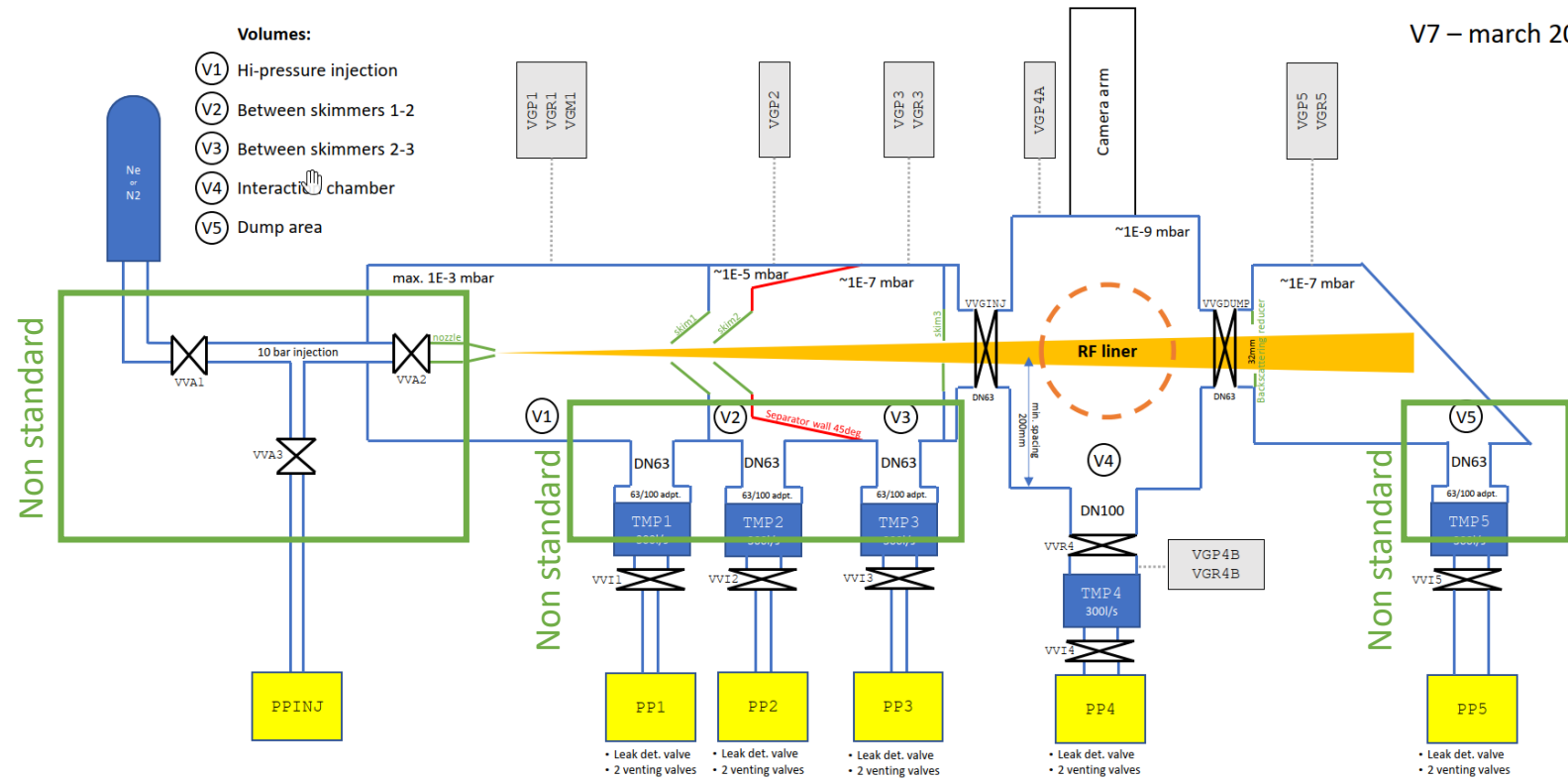
V7 – march 2022



- Test ultimate pressures (with/without injection)
- Test pumpdown times
- RGA scan
- Decide if bakeout needed

# Interlocks and controls

V7 – march 2022



- Controls section needs exact procedures and interlock conditions to start design
  - Difficulty depends on non-standardness
  - To define procedures on surface test instrument
  - PLC controllers have high (>6 months) lead time
- Choose and order gauges
- Test failure scenarios

# Simulations

- **v3**
  - LHC gas load and impact on NEG
    - First on BGI (uniform) injection then gas jet
    - Pressure profile to pass to FLUKA team for radiation simulations
- **v4**
  - Pressure/density profile and optimizations
- **HEL**
  - pressure profile at collector, then whole HEL
  - NEG saturation