Technical Operations, R&D

JIVE
Joint Institute for VLBI ERIC

Current hardware

1 100 Gbps

17 FlexBuff

3 Mark6

25 Mark5

1012 SFXCcores

R&D / >= 4 Gbps observations

4 Gbps e-VLBI

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  - #-of-stations down to two …

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• not enough working wide-bandwidth equipment

R&D / SFXC

New stable released

- Found & fixed some correlator freezes!
  - e.g. race condition on variable initialization order

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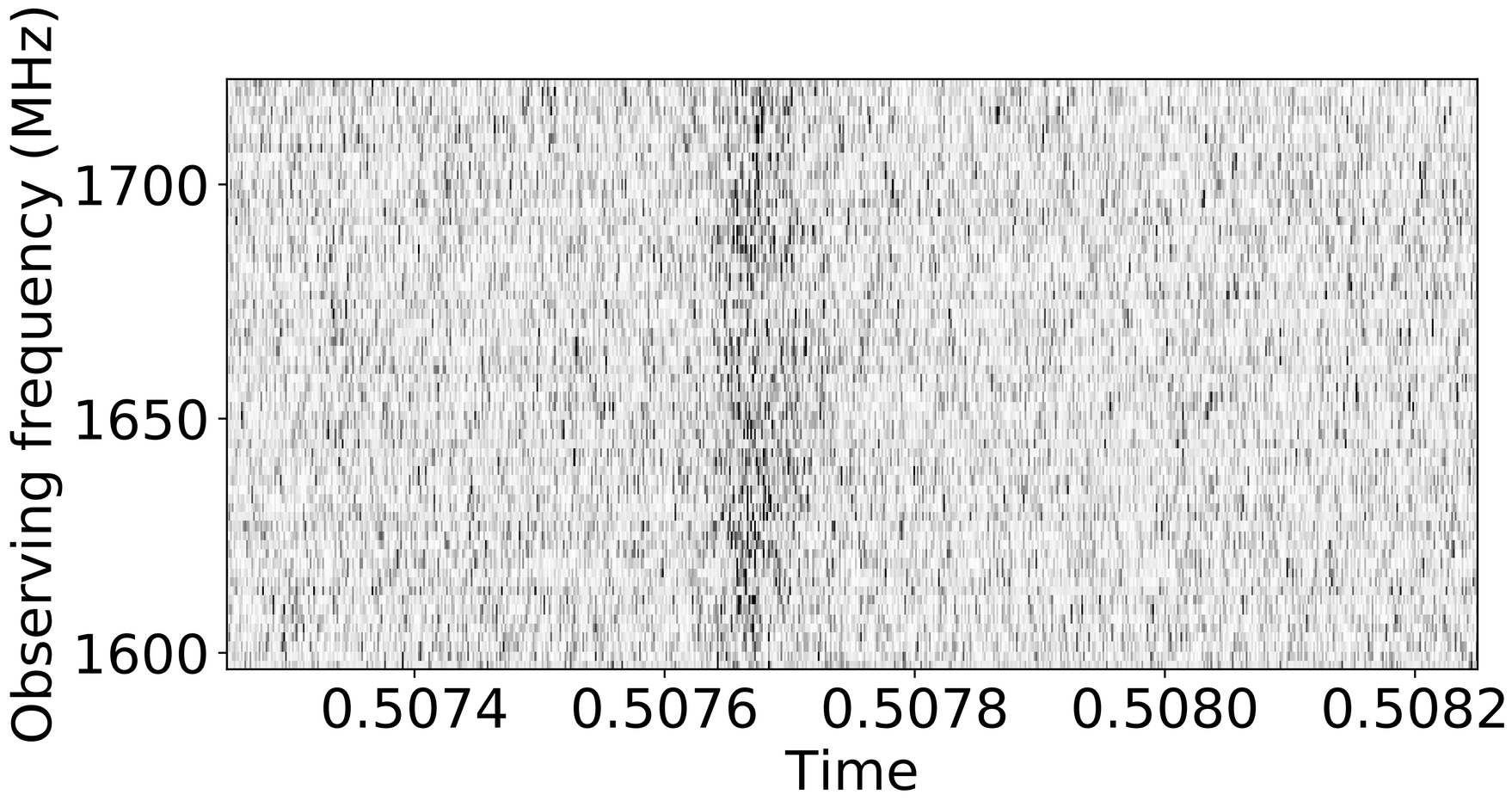
- Improvements
  - sub microsecond t_{int} coherent dedispersion for FRB structure

Frequency vs. Time



Highly polarised microstructure from the repeating FRB 20180916B

K. Nimmo, J. W. T. Hessels, A. Keimpema, A. M. Archibald, J. M. Cordes, R. Karuppusamy, F. Kirsten, D. Z. Li, B. Marcote, Z. Paragi

arxiv:2010.05800, to be published in Nature Astronomy

R&D / Projects / RadioNet RINGS

In current CASA release (“any day now”)

- fringe fit improvements
- importfitsidi fixes/improvements
- gain curve support
- per-scan interpolation in development

WP3 Open Source Software Registry

- development of replacement plotcal CASA5 task
  - removed from CASA6
  - integrates natively with Jupyter notebook

JupyterLab

eee-dev:8000/user/aardk/lab/tree/EVN_continuum_pyp.ipynb 80%

File Edit View Run Kernel Tabs Settings Help

EVN_continuum_pyp.ipynb

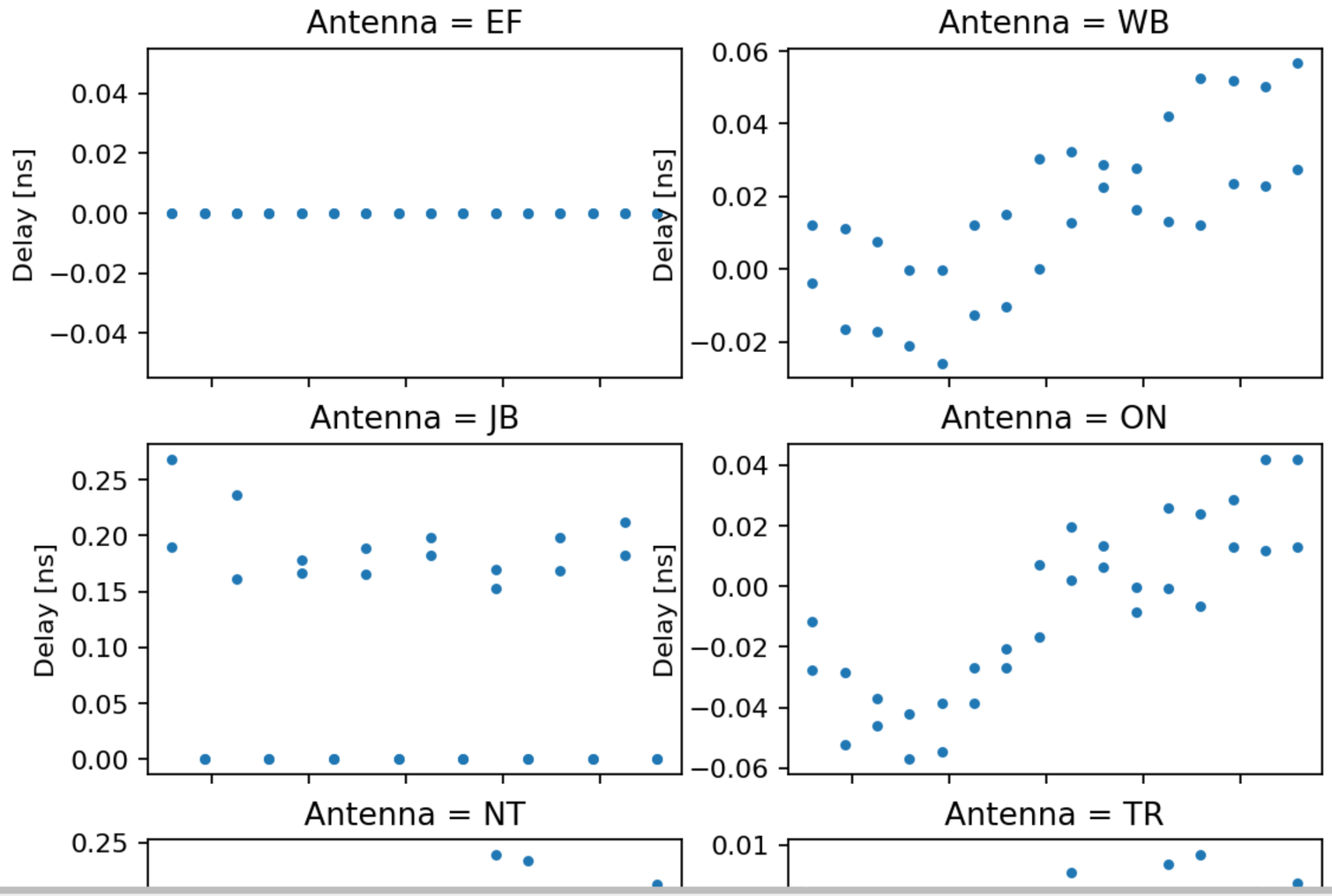
Markdown Casa

/

Name	Last Modified
N14C3	a month ago
applycal.last	a month ago
bandpass.l…	a month ago
casa-2021…	a month ago
casa-2021…	5 minutes ago
casa-2021…	a month ago
clearcal.last	a month ago
EVN_conti…	4 minutes ago
flagdata.last	a month ago
flagmanag…	a month ago
fringefit.last	a month ago
gencal.last	a month ago
importfitsid…	a month ago
listobs.last	a month ago
plotms_te…	2 hours ago
plotms.last	2 hours ago
Untitled.ip…	a month ago

[56]:
```
plotcalng(caltable=mbdtab,xaxis='time',yaxis='delay', field='J1640+3946', iteration='antenna')
```

```
subType = ['FRINGE', 'JONES'], caltype = FRINGE
subType = ['FRINGE', 'JONES'], caltype = FRINGE
```



Simple 2 0 Casa | Idle Saving completed Mode: Command Ln 1, Col 1 EVN_continuum_pyp.ipynb

R&D / Projects / ESCAPE

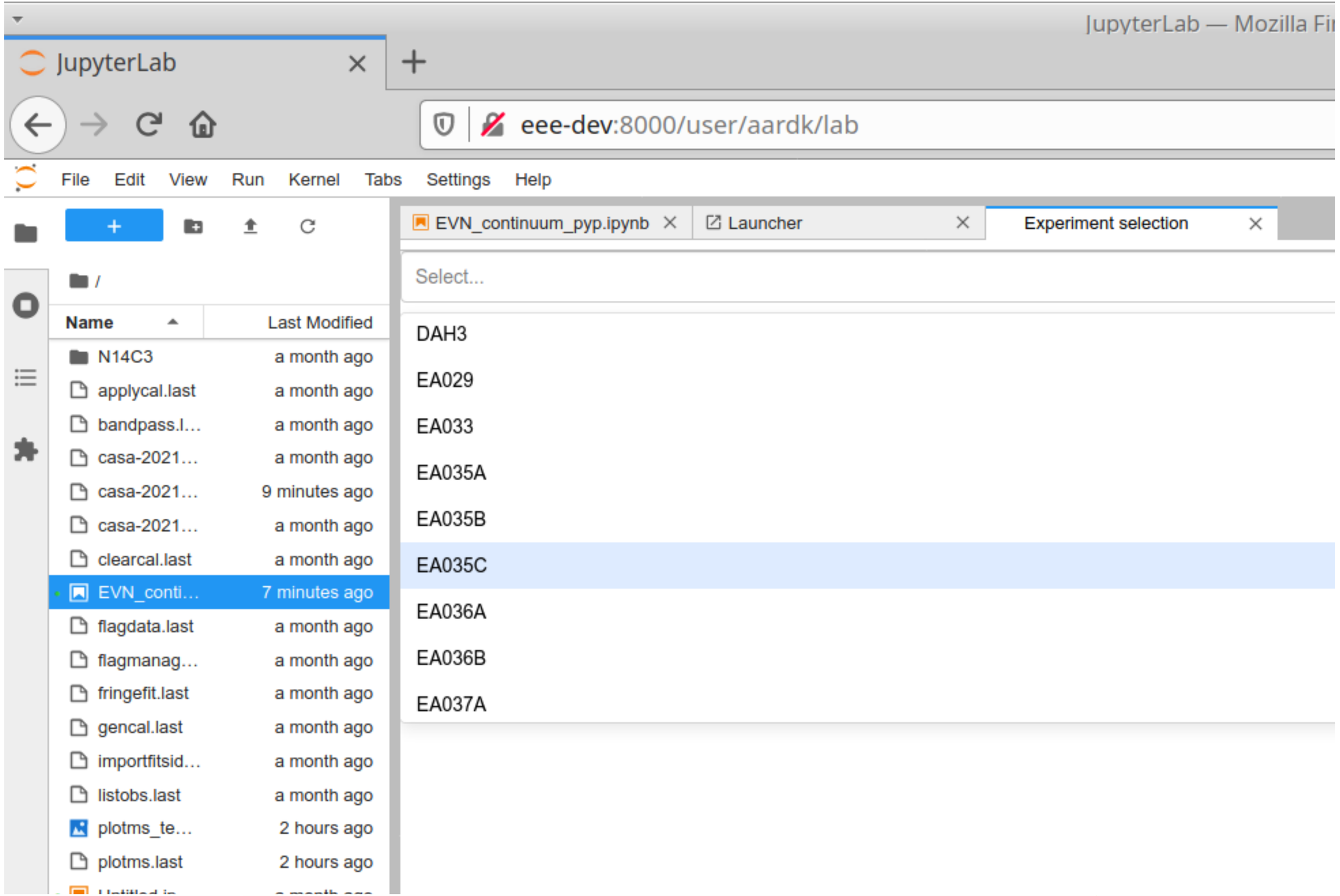
WP4 Connecting ESFRI projects to EOSC through VO framework

- EVN archive parsed & converted to VO database
- VO service server hardware purchased+installed
- experimental VO interface online

R&D / Projects / ESCAPE

WP5 ESFRI Science Analysis Platform

- Jupyterhub server hardware purchased+installed
- experimental online
- development of Jupyterlab plugin
  - download EVN data using VO protocol


JupyterLab — Mozilla Fi
JupyterLab
eee-dev:8000/user/aardk/lab
File Edit View Run Kernel Tabs Settings Help
EVN_continuum_pyp.ipynb
Launcher
Experiment selection
Select...
DAH3
EA029
EA033
EA035A
EA035B
EA035C
EA036A
EA036B
EA037A
/
Name
Last Modified
N14C3 a month ago
applycal.last a month ago
bandpass.l… a month ago
casa-2021… a month ago
casa-2021… 9 minutes ago
casa-2021… a month ago
clearcal.last a month ago
EVN_conti… 7 minutes ago
flagdata.last a month ago
flagmanag… a month ago
fringefit.last a month ago
gencal.last a month ago
importfitsid… a month ago
listobs.last a month ago
plotms_te… 2 hours ago
plotms.last 2 hours ago

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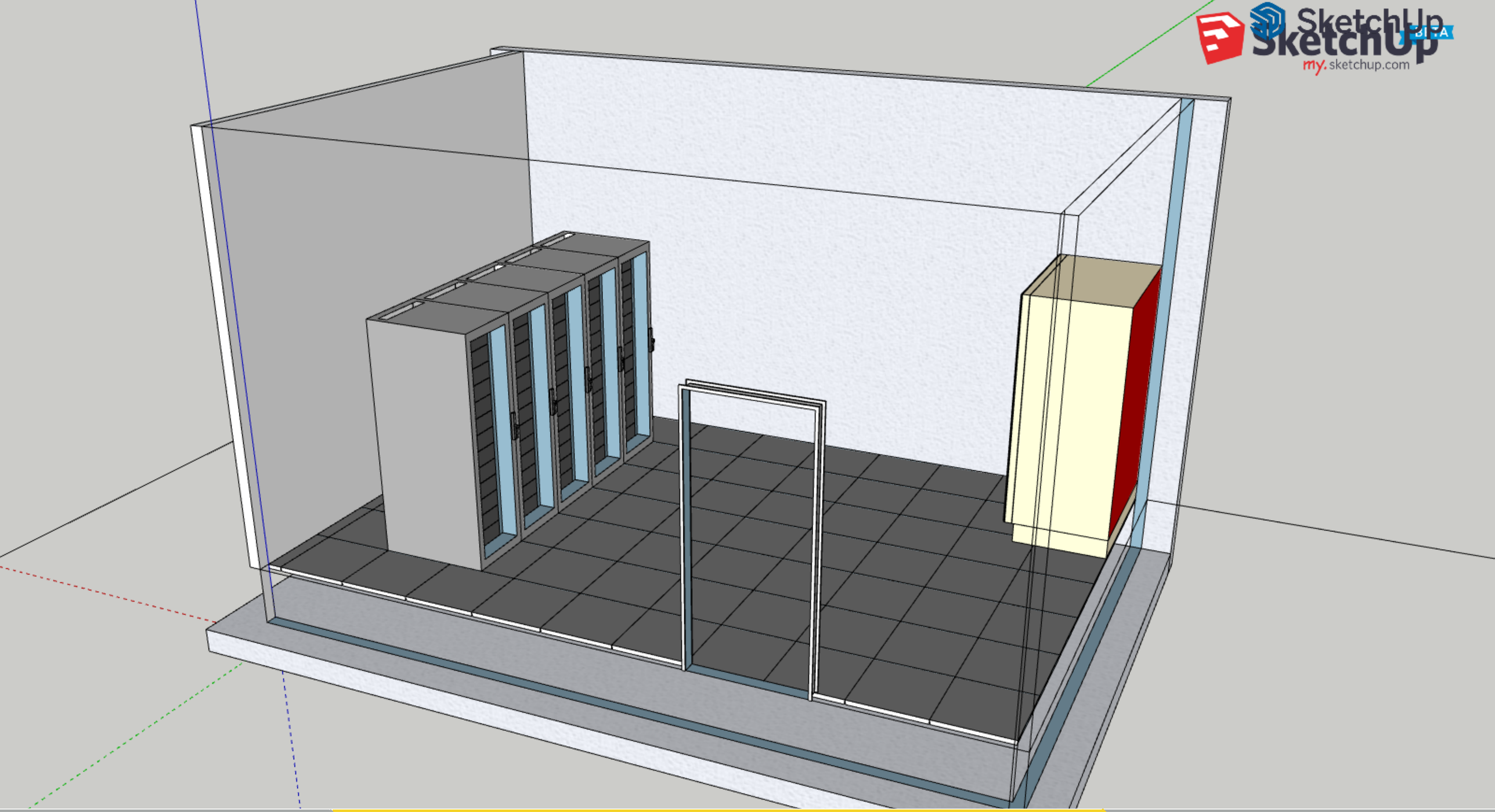
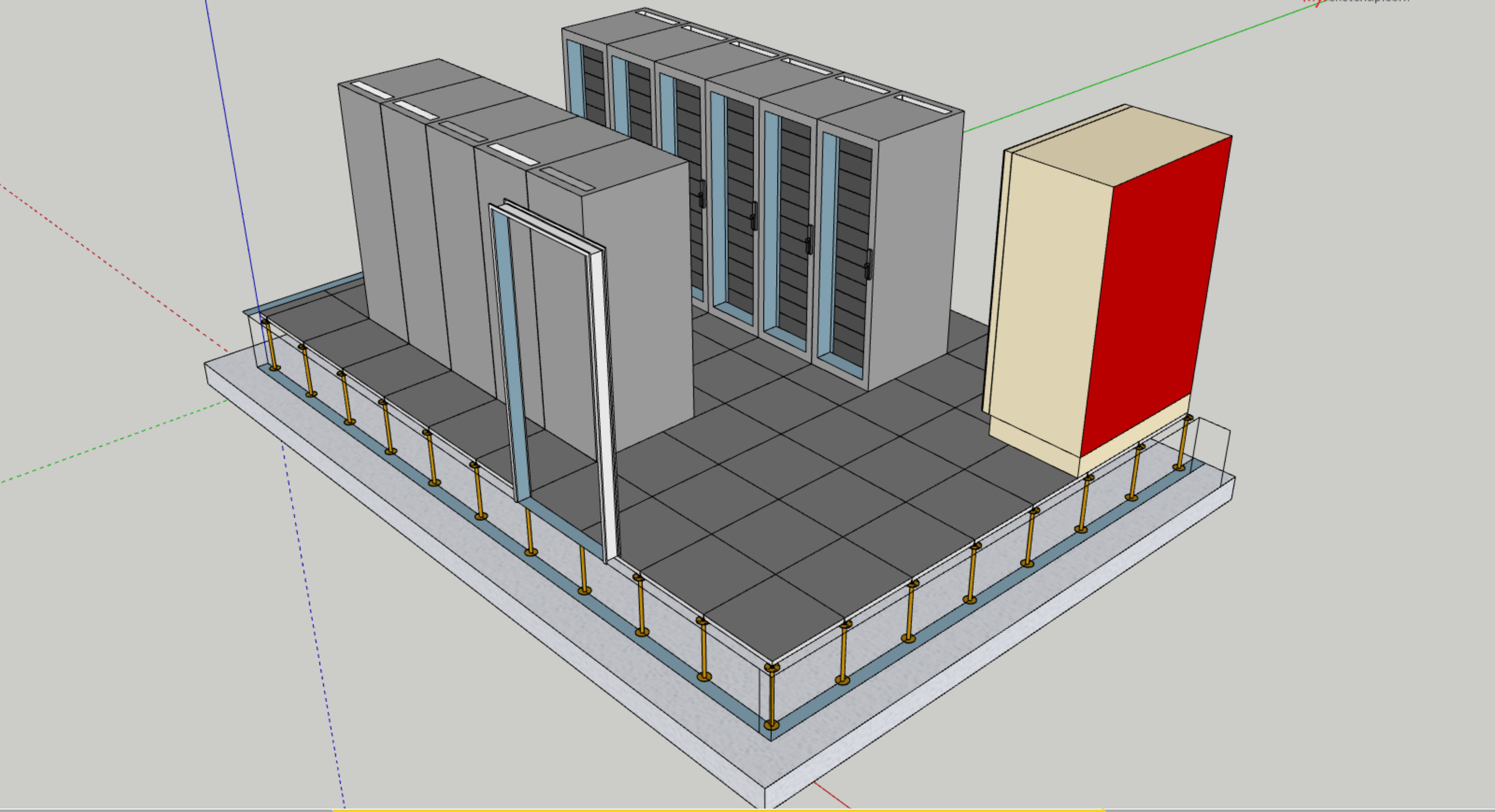
- Prepare for doubling of storage
  - reinforcing the floor (double the HDD weight!)
  - extra mains, network connections, cooling, …


SketchUp
SketchUp BETA
my.sketchup.com



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- archive.jive.nl
  - modernized, some security/accessibility fixes
  - should be replaced this year

Thanks for your attention!