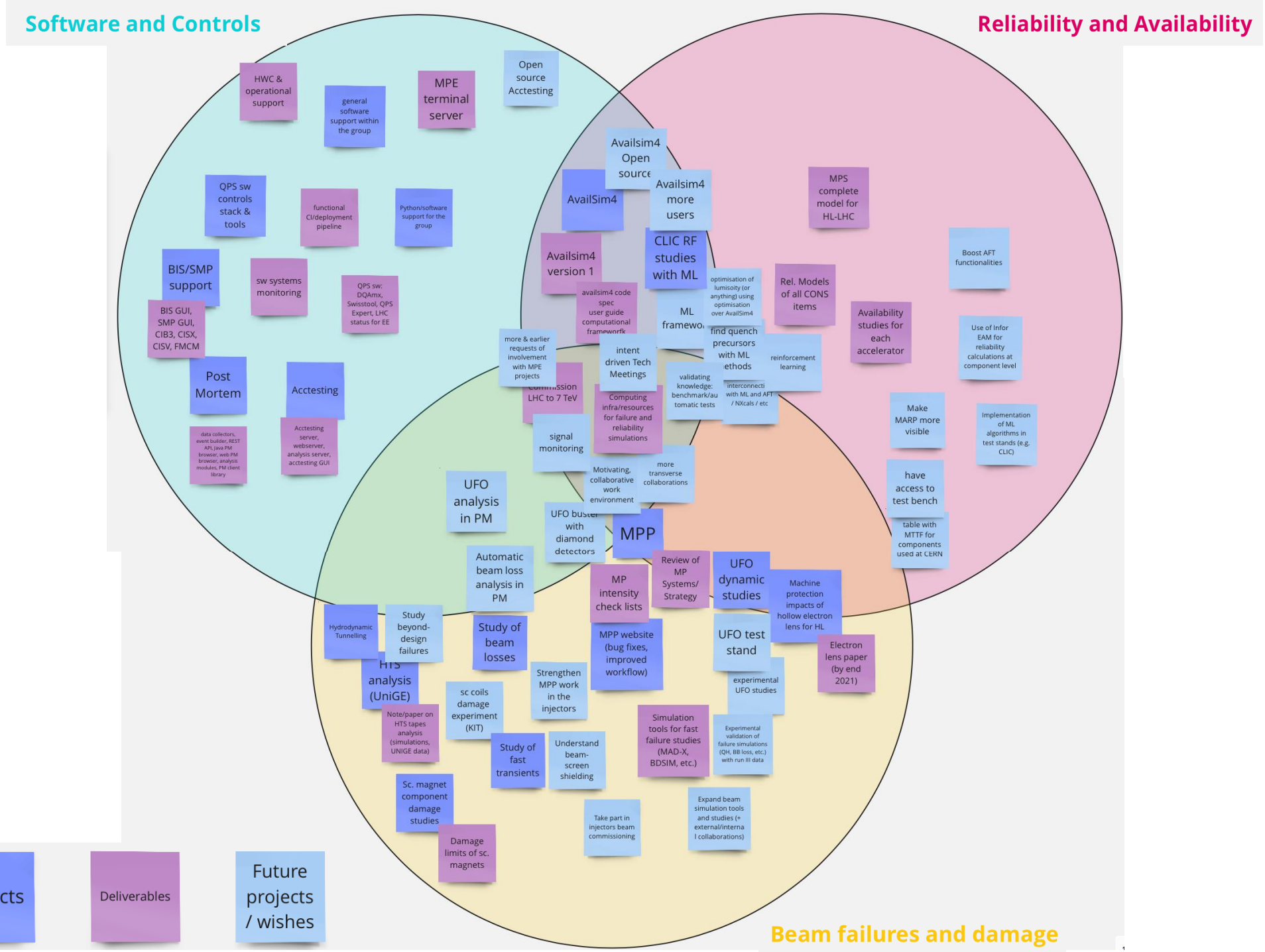
Software and Controls
Reliability and Availability
Beam failures and damage
HWC & operational support
general software support within the group
MPE terminal server
Open source Acctesting
QPS sw controls stack & tools
functional CI/deployment pipeline
Python/software support for the group
BIS/SMP support
sw systems monitoring
QPS sw: DQAmx, Swisstool, QPS Expert, LHC status for EE
BIS GUI, SMP GUI, CIB3, CISX, CISV, FMCM
Post Mortem
Acctesting
data collectors, event builder, REST API, Java PM browser, web PM browser, analysis modules, PM client library
Acctesting server, webserver, analysis server, acctesting GUI
Availsim4 Open source
AvailSim4
Availsim4 more users
Availsim4 version 1
CLIC RF studies with ML
availsim4 code spec user guide computational framework
optimisation of lumisoity (or anything) using optimisation over AvailSim4
ML framework
MPS complete model for HL-LHC
Rel. Models of all CONS items
Boost AFT functionalities
Availability studies for each accelerator
Use of Infor EAM for reliability calculations at component level
more & earlier requests of involvement with MPE projects
intent driven Tech Meetings
find quench precursors with ML methods
reinforcement learning
validating knowledge: benchmark/automatic tests
interconnection with ML and AFT / NXcals / etc
Commission LHC to 7 TeV
Computing infra/resources for failure and reliability simulations
Make MARP more visible
Implementation of ML algorithms in test stands (e.g. CLIC)
signal monitoring
Motivating, collaborative work environment
more transverse collaborations
have access to test bench
table with MTTF for components used at CERN
UFO analysis in PM
UFO buster with diamond detectors
MPP
Automatic beam loss analysis in PM
Review of MP Systems/ Strategy
UFO dynamic studies
Machine protection impacts of hollow electron lens for HL
MP intensity check lists
Hydrodynamic Tunnelling
Study beyond-design failures
Study of beam losses
MPP website (bug fixes, improved workflow)
UFO test stand
Electron lens paper (by end 2021)
HTS analysis (UniGE)
Strengthen MPP work in the injectors
experimental UFO studies
sc coils damage experiment (KIT)
Note/paper on HTS tapes analysis (simulations, UNIGE data)
Simulation tools for fast failure studies (MAD-X, BDSIM, etc.)
Experimental validation of failure simulations (QH, BB loss, etc.) with run III data
Study of fast transients
Understand beam-screen shielding
Sc. magnet component damage studies
Take part in injectors beam commissioning
Expand beam simulation tools and studies (+ external/internal collaborations)
Damage limits of sc. magnets
Projects
Deliverables
Future projects / wishes