

## **Accelerator session introduction**

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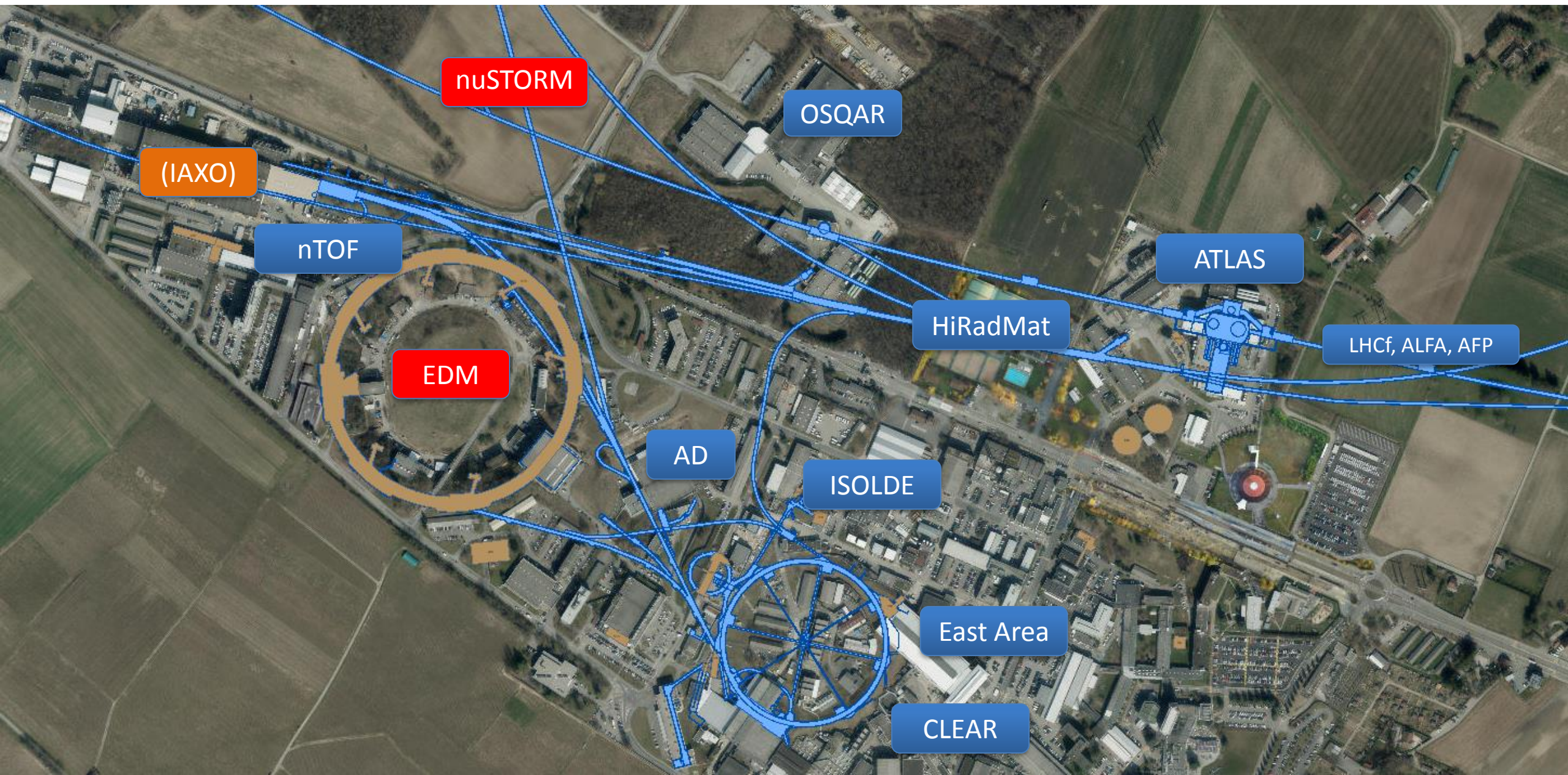
# PBC - Scientific goal

- The main goal of the Study Group is to explore the opportunities offered by the CERN accelerator complex to address some of today's outstanding questions in particle physics through **experiments complementary to high-energy colliders and other initiatives in the world.**
- These experiments would typically:
  - ...exploit the unique opportunities offered by CERN's accelerator complex and scientific infrastructure...

# What has CERN got to offer?

- Existing accelerator complex and associated infrastructure
  - Wide range of beams, intensities, energies
- Technical expertise
  - Vacuum, magnets, power converters, RF, instrumentation, beam transfer, targets, cryogenics, accelerator physics, engineering...
- Experience
- Support
  - workshops, test facilities, engineering...
- Resources, size, and flexibility
  - Maximize performance of existing complex
  - Harness existing expertise and resources
  - New facilities exploiting existing complex
  - Novel exploitation of existing facilities





nuSTORM

OSQAR

(IAXO)

nTOF

EDM

AD

ISOLDE

HiRadMat

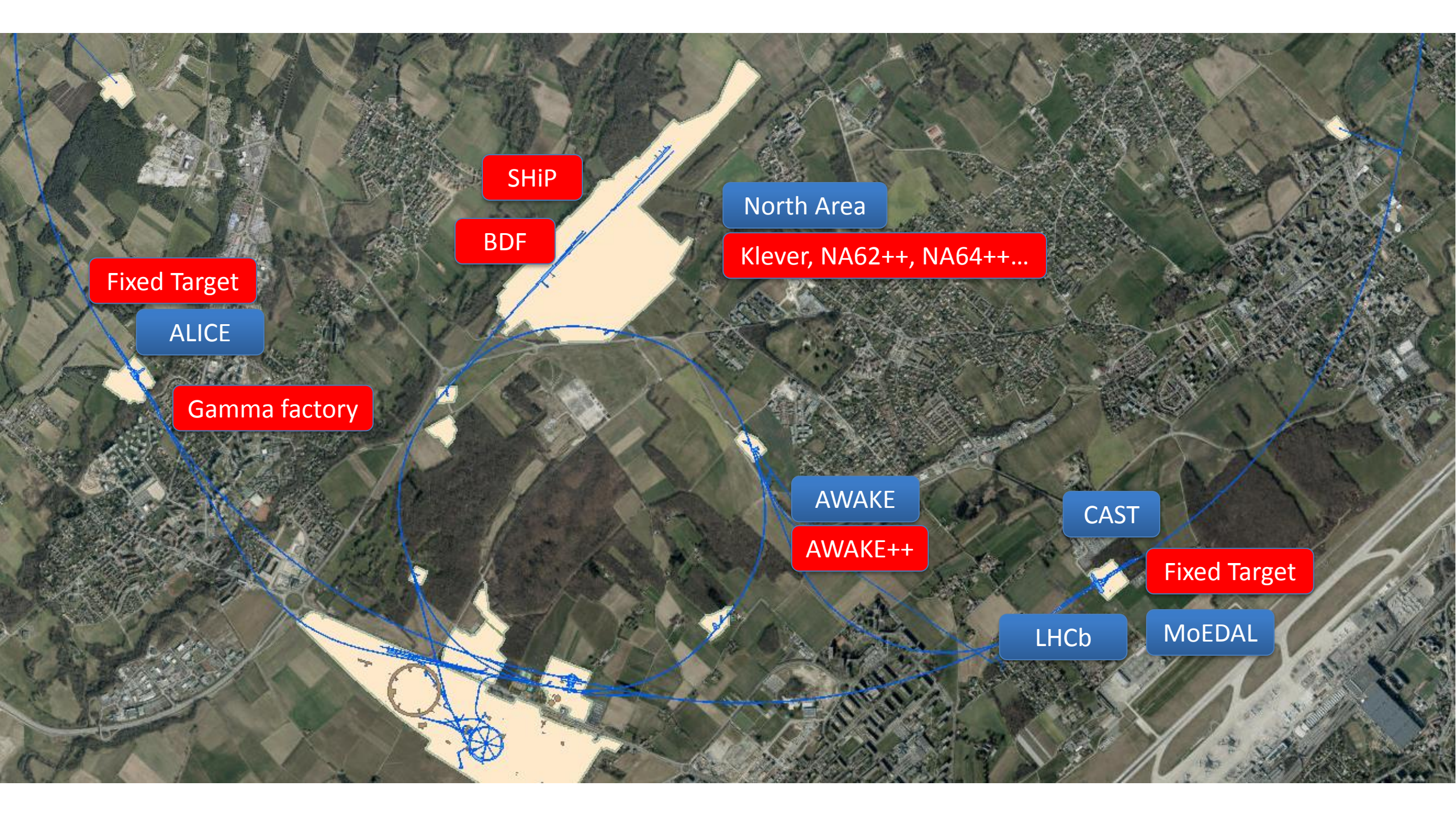
ATLAS

LHCf, ALFA, AFP

East Area

CLEAR





SHiP

BDF

North Area

Klever, NA62++, NA64++...

Fixed Target

ALICE

Gamma factory

AWAKE

AWAKE++

CAST

Fixed Target

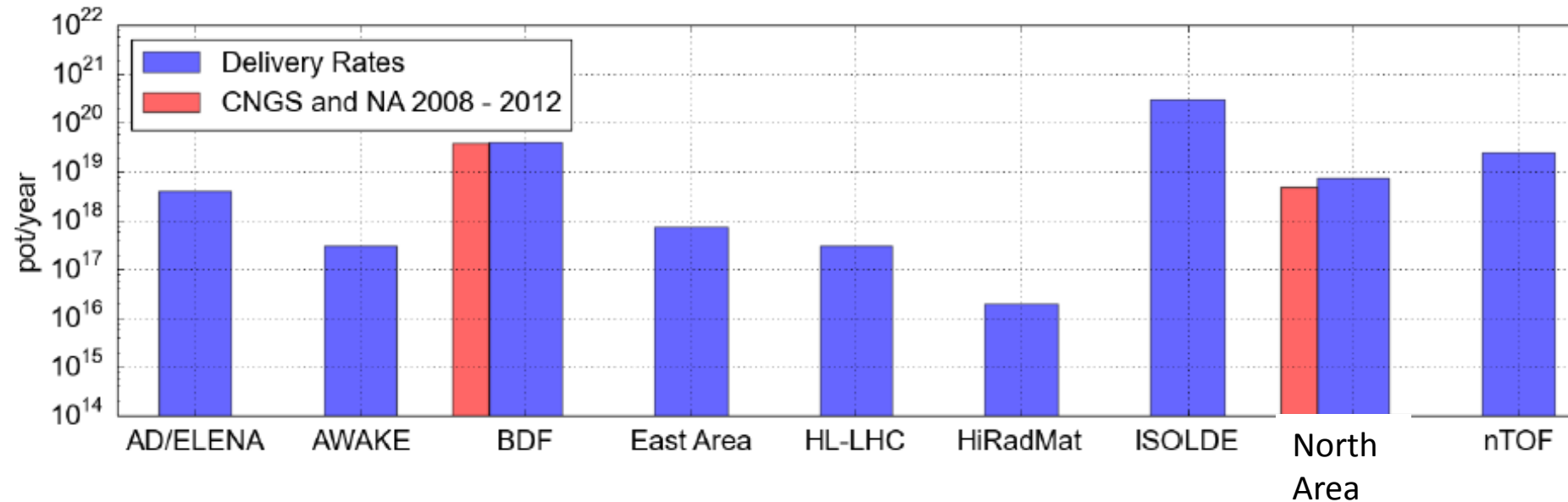
LHCb

MoEDAL



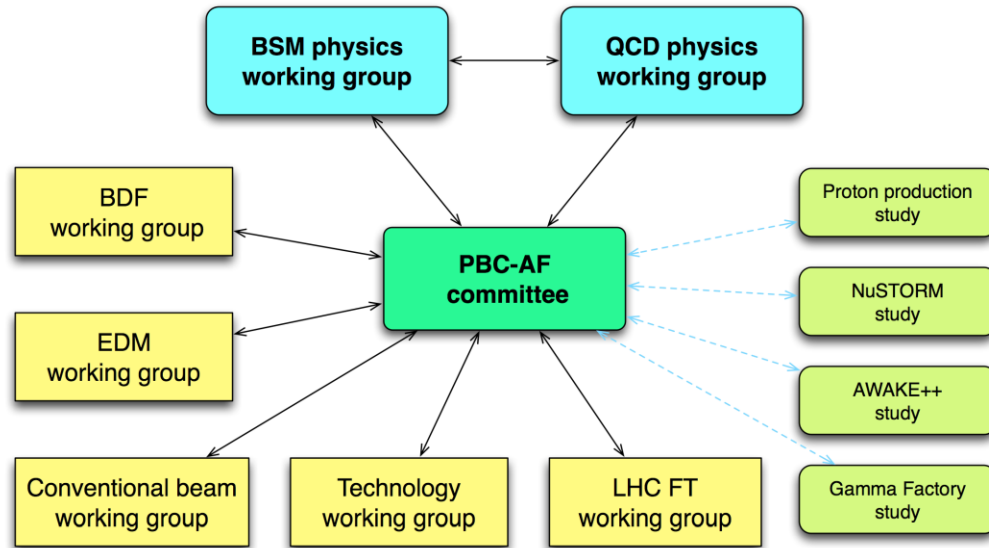
# Complex already heavily solicited

- LHC will continue to dominate
- Diverse forward looking program already in place!



Nonetheless...

# On the list at the moment



- Maximize performance of existing complex
- Harness existing expertise and resources
- New facilities exploiting existing complex
- Novel exploitation of existing facilities

- Studies clearly at different stages
- Nothing too radical - such as a new proton driver (SPL, PS2 etc.)
- Probably appropriate given the medium to long term priorities of the lab

# All teams up and running

If you are prepared to accept meetings as measure of activity...

PBC-AF commitee	6 events	➡
Beam Dump Facility	51 events	➡
Conventional beams	4 events	➡
EDM storage ring	9 events	➡
LHC fixed target	6 events	➡
nuSTORM	3 events	➡
Technology	3 events	➡
Physics - BSM	7 events	➡
Physics - QCD	empty	➡



# Input to ESPP update

Overall executive summaries plus:

Protons post LIU	Evaluation and proposals
Technology	Evaluation and proposals
BDF	Comprehensive design study
Conventional beams	Case dependent feasibility studies
LHC FT	Preliminary conceptual designs
EDM	Feasibility study
Gamma factory	Exploratory study
AWAKE++	Exploratory study
nuSTORM	Exploratory study

# Conveners

<b>BDF</b>	Marco Calviani, Brennan Goddard, Richard Jacobsson, ML
<b>Conventional beams</b>	Lau Gatignon, Markus Brugger
<b>Protons post LIU</b>	Giovanni Rumulo, Hannes Bartosik
<b>LHC FT</b>	Massi Ferro-Luzzi, Stefano Redaelli
<b>EDM</b>	Hans Ströher, Yannis Semertzidis
<b>Gamma factory</b>	Witek Krasny, Reyes Alemany
<b>Technology</b>	Andre Siemko, Babette Döbrich
<b>AWAKE++</b>	Edda Gschwendtner, Matthew Wing
<b>nuSTORM</b>	Ken Long, ML

Huge thanks to the conveners and the members of the working groups for the uptake – always in addition to existing workloads and with only limited injection of additional resources