

# Operations of the NA, EA and CNGS

ATC/ABOC

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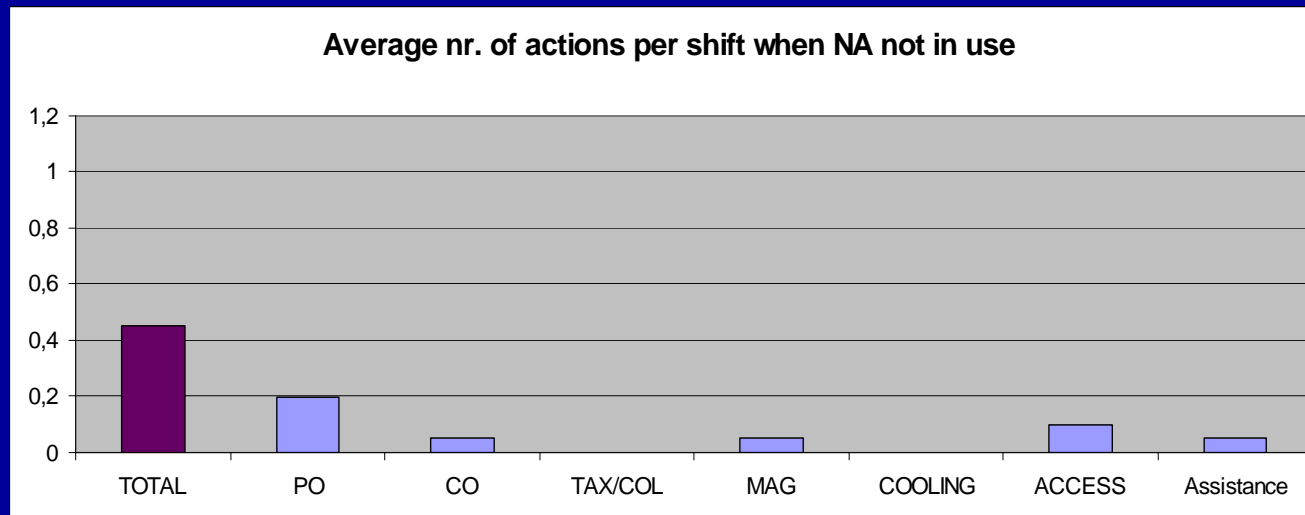
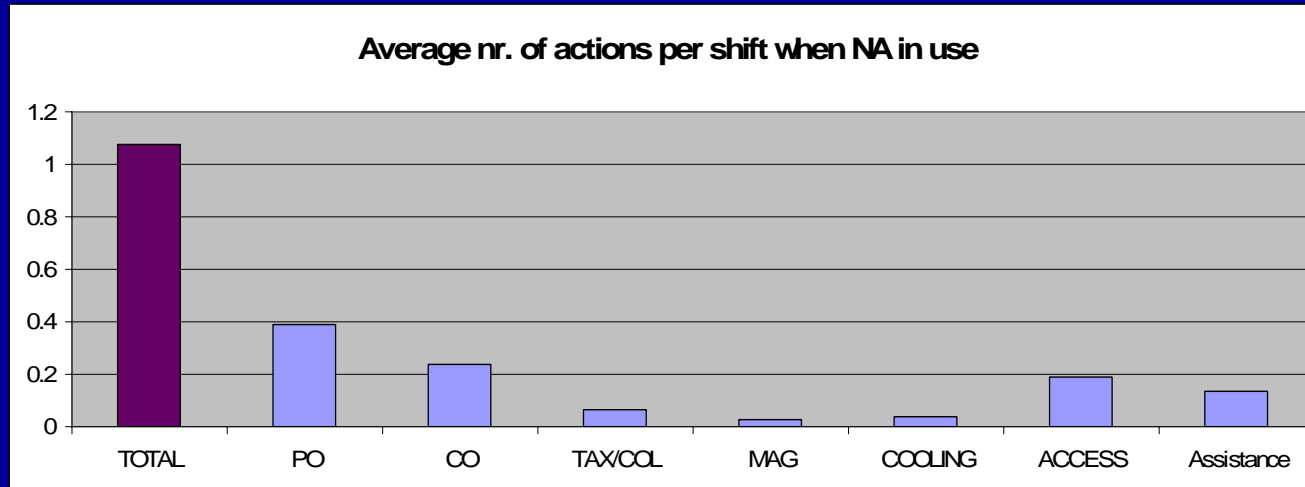
# Organization of EA operations

- EAST HALL
  - Secondary beams are operated by the users.
  - PS operators handle technical problems.
- NORTH AREA
  - Setting up (commissioning) of secondary beam lines done by EA experts. They provide operational setting files.
  - SPS operators handle the technical problems of the secondary beam lines.
  - SPS operators change beam conditions according to schedule using operational setting files

# Impact of the North Area on operations

- Since 2003 SPS-OP has taken over the operation of North and West area, before in hands of an ad hoc OP group.
- Responsibility for access patrols in the experimental zones was transferred to the users in 2004.
- 2003 and 2004 were „easy“ years (one type of beam) but how does it look like in the LHC era?

## Impact of NA on operations (seen from the logbook)



# Example

43.000			we received a call from H6; they say they loaded beam file H6A001, which they used already in July but the beam intensity is much too low; we found that current wobbling settings for T4 are not compatible with what H6 wants (hadrons @ +120GeV) created by <a href="#">spsop</a> on <a href="#">cwo-ccc-a6lc</a>
	Comment New Mail	23:26	
			wobbling settings of T4 before change, which was suggested by Ilias, whom we called for advise
3	Comment New Mail	23:49	
			T4 wobbling.png created by <a href="#">spsop</a> on <a href="#">cwo-ccc-a6lc</a>
			loaded wobbling T4.001 (H6@+120) and "autopiloted" beam to T4 (in 5 SC the symmetry went up from 56% to 96% !); N.Doble (P0) is happy and H6 sees beam; H6 still check a few things...
4	Comment New Mail	23:51	
			T4 wobbling.png

## Other examples

14		H2A call to change the energy from +300 GeV/c (H2B.010) to +200 GeV/c (H2B.018). H2B.018 file loaded. The beam is not centered on the experiment. We try to scan over the experimental scaler H2B1_EXPT01 but the scan result is not consistent. After some discussion we try to load the file H2B.125 (+150 GeV/c) that was fine for Pamela experiment but the beam is still not centered in horizontal plane. This time we center the beam on the MWPC09 using the BEND6 (TRIM08 is not strong enough) but the H2B1_EXPT01 count is still not fine. Finally the experiment find that the high voltage of the experiment scintillator plugged to the experimental scaler was too low! Called L.Gatignon that suggest to use also the BEND7 to center the beam!
Comment	20:36	
New		
Mail		

2		radiation alarm level B from monitor PAXN1462; H8 called to say they don't have beam anymore created by <a href="#">spsop</a> on <a href="#">cwo-ccc-a6lc</a>
Comment	13:22	
New		
Mail		
3		radiation alarm triggered because H6 went from high intensity beam to low intensity beam and they first opened collimators before reloading rectifier currents; reset radiation alarm and re-establish beam for H8
Comment	13:26	
New		
Mail		

# Problems seen by the operators

- Communication and information
  - Beam line schedules and schedule changes.
  - What experiments are allowed to request.
  - Up to date patrol lists
- Some new experiments don't seem to know their environment.



# Impact of NA on operations with frequent supercycle changes

- Problem of stability of TT20 especially the sharing between T2, T4 and T6.
- Information to experiments.

# Tools and support

- Support from EA specialists is essential
- Organisation of information is under discussion.
- Access to optics of the lines.
- CESAR : positive balance, but some useful improvements can help us a lot.
- Autopilot for target steering is of great help.

# Impact from CNGS

- Static operation : shoot the beam in the middle of the target.
- One steering per day keeps perfect conditions and you can leave the line untouched for over a week before it is out of tolerance.
- Simple but dangerous (lot of interlocks some of which using PC-current and beam measurements.)
- Main operation's effort is on keeping the beam quality in the ring. Especially with frequent SC-changes.

# Tools and support for CNGS

- Display, diagnostics of interlock system.
- Good functioning of monitors in beam line indispensable.
- Need of specialist help for beam-monitors-target-horn alignment.
- Heavy involvement of RP in access procedures.

# Conclusions

- Operating EA, NA and CNGS in the LHC era should be possible provided we take care of some points :
  - Communication and information channels with EA and physicists should be enforced and maintained.
  - Good tools are essential to do more work with less people.