IR 4 available space and incoming requests

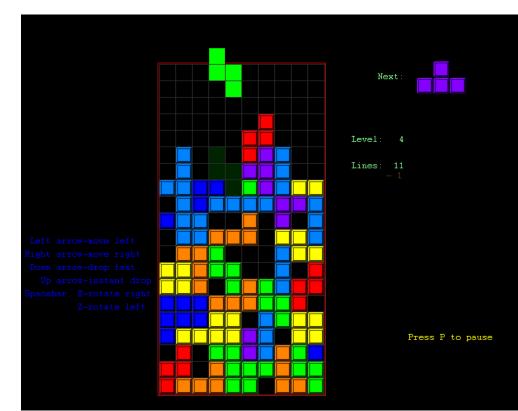
C. Collazos, P. Fessia, S. Chemly Input from R. Calaga, W. Hofle, R. Jones, J. Jowett, S. Redaelli and others

Optics vs. Layout

- We need to fix a "status" on which we define and release an official lay-out
- This will be decoupled from the optics, freezing one specific optic
- We should target to freeze the picture probably in February for release in April

Summary

- IR 4 space status on paper
- The space reservation
- The requests
- A tetris test



IR 4 status on paper

- The status of space reservation come from the cross checks of 3 different source of information
 - The CDD lay-out drawings of the LSS
 - LHCLSX__007
 - LHCLSX__008
 - The extraction (under excel format) from the lay-out database of the equipment installed on each beam
 - The lay-out 2 beam drawings coming from the lay-out database
- The space reservation are not dynamically linked to these 3 sources. Therefore gap (in space and in time) could exist

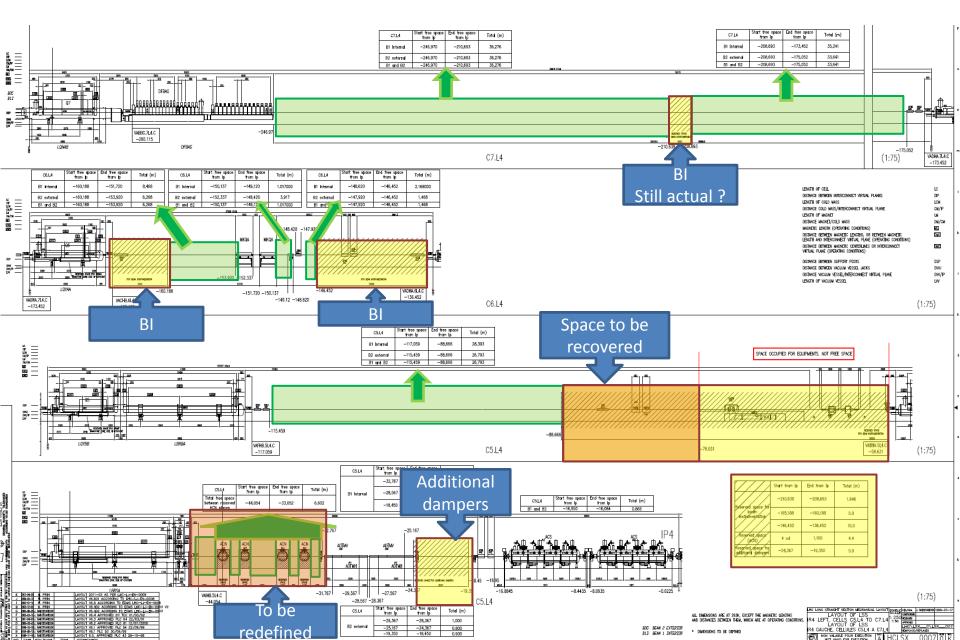
Space reservations

- The specific content
 - Space reservations in IR 4 shall be reviewed critically as soon as possible because
 - Few of them shall be resized: i.e. BGV
 - Few of them need to be challenged:
 - Few of them are obsolete: ACN
- We need to review space reservation process for HL-LHC
 - Document: it is a good opportunity to start using functional specs
 - Approach and approval: we need to establish a formal approval in addition to EDMS like bringing them periodically in front of a body. I.E. PLC. In order to make them as most credible as possible and make the work of everyone easier they should target as best the real space to be used
 - Tracking we need to have better tool to track them and link the documents (functional spec) with the materialization of the machine. Possibly we need to introduce them I nteh lay-out as special type of equipement

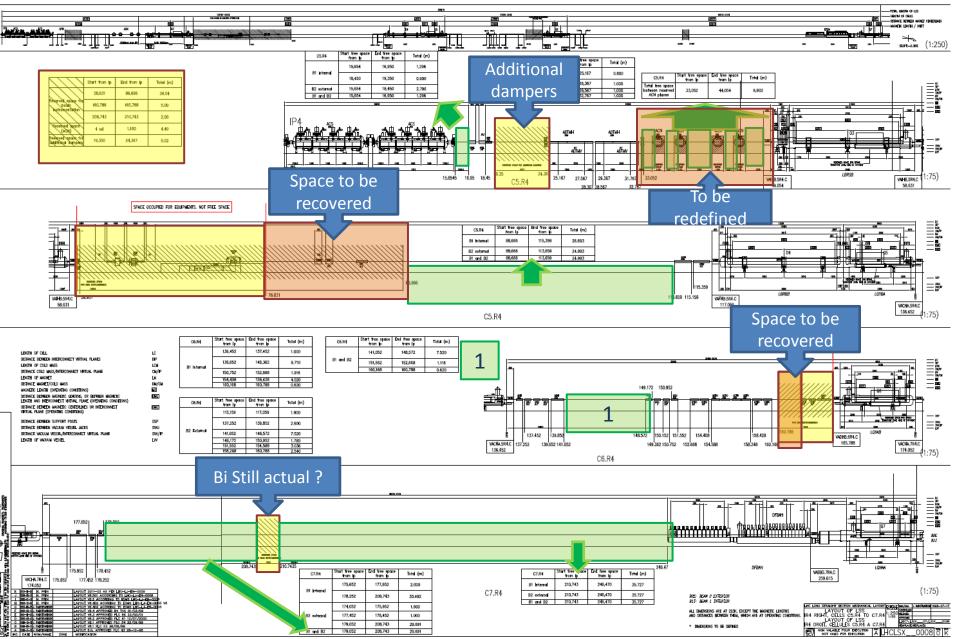
• Excel file with space available for 1 cell

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TOTAL	Free space		115.159	117.059				1.9				
							TOTAL					

IR4L



IR4R



Beam instrumentation I (guess in italics)

Eq. name	IR side	B1	B2	Length [mm]	Position	Remarks
BGV	L	Х		10000	Between Q6 and Q7	44 m reserved by ECR
BGV	R		Х	10000	Between Q6 and Q7	44 m reserved by ECR
BGV	L	Х		10000	Between Q6 and Q7	44 m reserved by ECR
BGV	R		Х	10000	Between Q6 and Q7	44 m reserved by ECR
BSRT	L				Already installed	Bring the optical line in UA (feasible? Transport ? Civil engineering)
BSRT	R				Already installed	Bring the optical line in UA (feasible? Transport ? Civil engineering)
Extra BPM	R		Х		between Q5 and Q6	Close to BPLX
Extra BPM	R		Х		between Q5 and Q5	Close to BPLX

Beam instrumentation II (guess in italics)

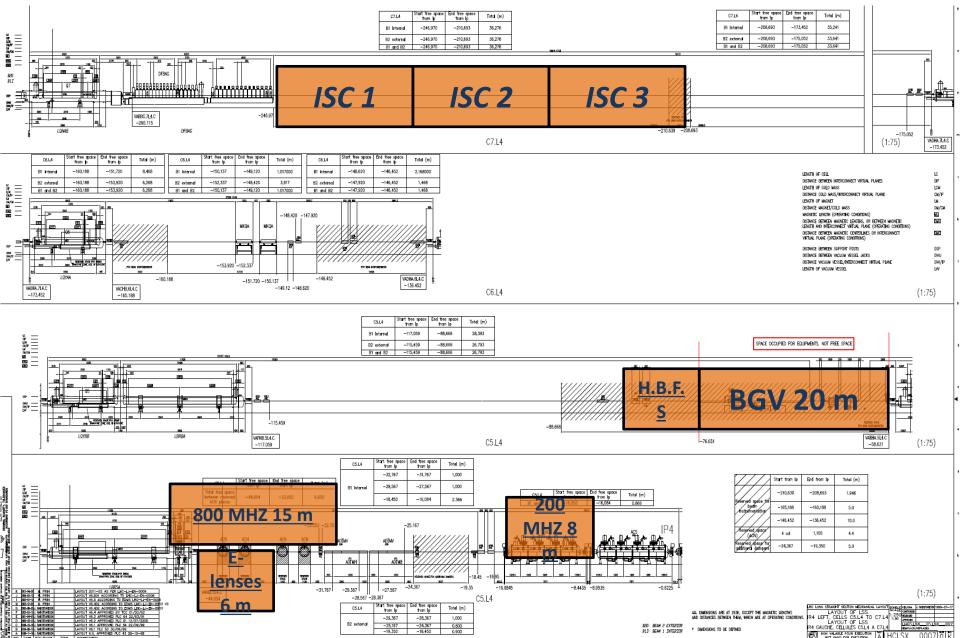
Eq. name	IR side	B1	B2	Length [mm]	Position	Remarks
Halo e lenses	L	X		6000	Near D3 after ondulator	
Halo e lenses	R		X	6000	Near D3 after ondulator	

RF very preliminary estimates (guess in italics)

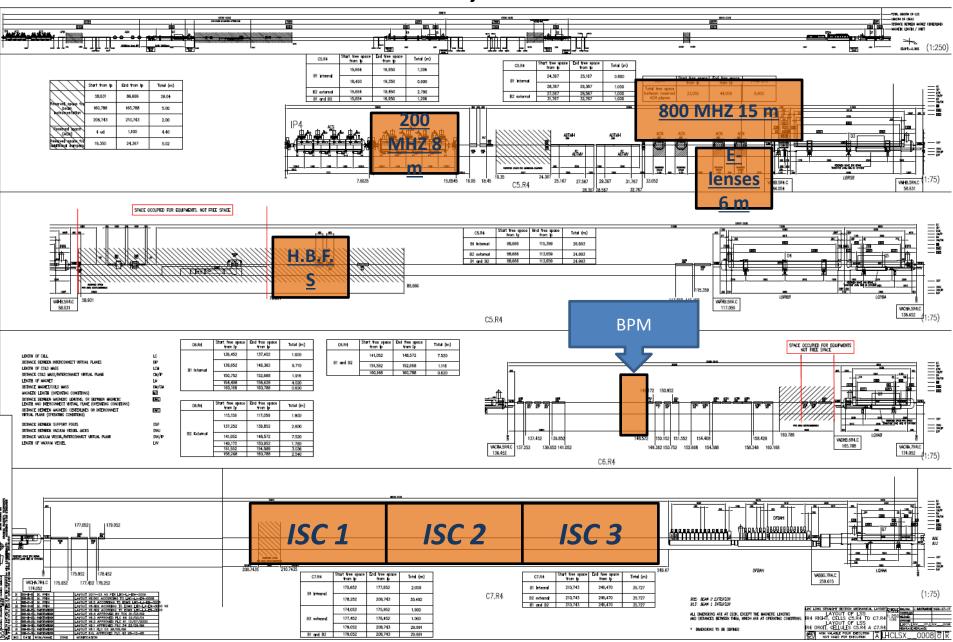
Eq. name	IR side	B1	B2	Length [mm]	Position	Remarks
800 MHz	L	X		15000 +/- 3000	In the area or present ACN	
800 MHz	R		X	15000 +/- 3000	In the area or present ACN	
200 MHz	L	X		8000	possibly replace one 400 MHz ACS module	
200 MHz	R		X	8000	possibly replace one 400 MHz ACS module	

~				•	. /	• •, /• \
Eq. name	IR side	B1	B2	Length [mm]	Position	Remarks
Ion stochastic cooling (ISC)	L	X		3X12000	To de defined	12000 mm for each plane, not necessarily contiguous
lon stochastic cooling (ISC)	R		X	3X12000	To de defined	12000 mm for each plane, not necessarily contiguous
ISC pick ups		X		nX500	IR 2 or IR3	Connect with optical fibres to IR4
ISC pick ups			X	nX500	IR 5 IR 6	Connect with optical fibres to IR4
High Bandwidth Transv system	L	X		6000-7000 ?		Possible useful space also in part with less beam separation to be investigated
High Bandwidth Transv system	R		X	6000-7000 ?		Possible useful space also in part with less beam separation to be investigated

IR 4 L, tetris



IR 4 R, tetris



Conclusions

- We need to complete equipment survey for IP4
- We need to revise the reservations
- We need to re-reserve equipment space with adequate procedure to prepare ourselves at next 10 years of changes with HL-LHC