



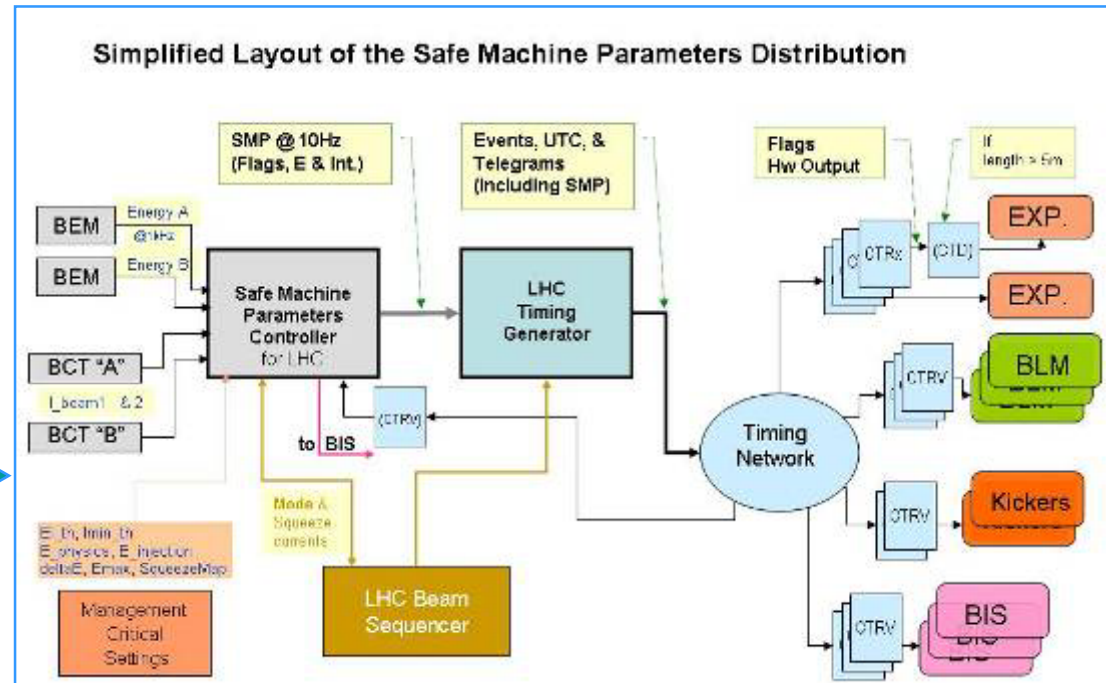
Summary of received requests for Safe Machine Parameters (SMP Flags) & Post-Mortem Event

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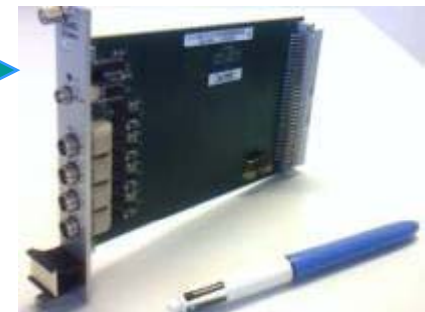
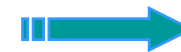
- (most of) Safe Machine Parameters (SMP) are distributed over to the LHC General Machine Timing (GMT) network



- Amongst the different info broadcasted by the GMT, 2 types are only mentioned here:
 - Events not part of the SMP, referred as “Machine Events”: like “**Post-Mortem**” event
 - Events attached to Safe Machine Parameters, like the “SMP Flags”:
 - **Safe Beam Flags (Beam1 and Beam2)**
 - **Stable Beam Flag**
 - “**Movable device allowed in**” Flag

It has been agreed that AB/CO will supply the technical solution for supplying Hw signals corresponding to SMP flags (and to Machine Events)...

- GMT crate supplied by AB/CO and installed in each Experiment point
- Connected to LHC General Machine Timing (GMT) network
- Containing adequate amount of CTRx cards for supplying the needs
- And additional Line driver modules
(if distance between CTRx front-panel and corresponding Experiments system > 5 meters)
- AB/CO in charge of managing the CTRx settings.



Limit of responsibility stops at the level of the front-panel.

in order to know type of the crate, quantity of CTRx cards and amount of line drivers:

Installation Form sent to each BISU 

In order to prepare the material and the installation, please fill the table here below:

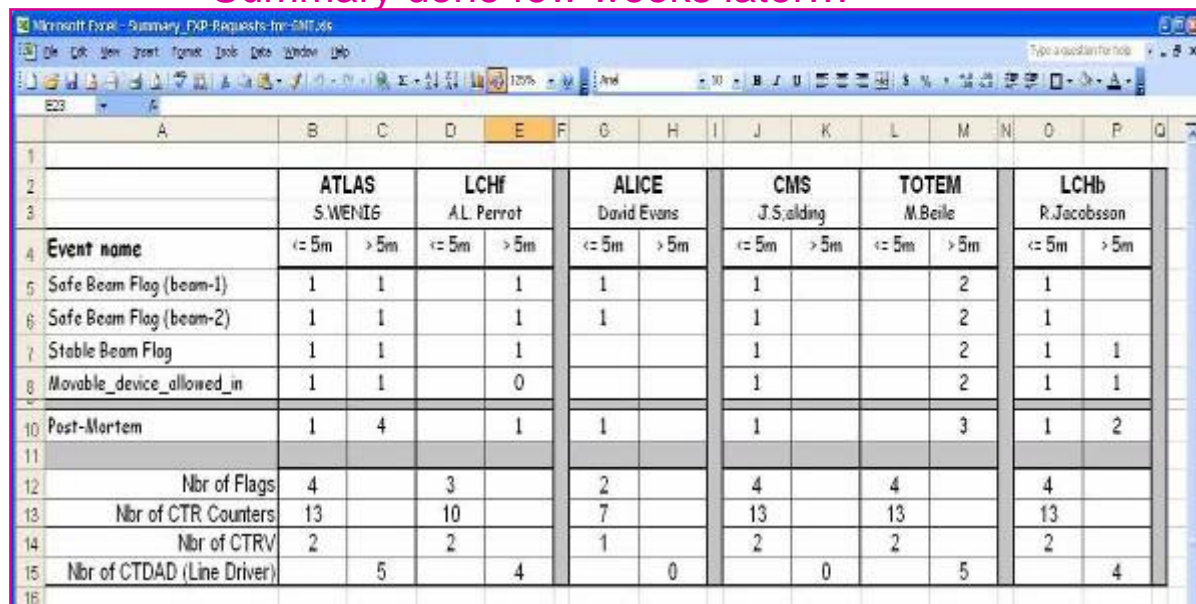
Event name	Hw signal needed (Yes/No)	Nbr of connection with cable length		Comments:
		<= 5m	> 5m	
Safe Beam Flag (beam-1)				
Safe Beam Flag (beam-2)				
Stable Beam Flag				
Movable_device_allowed_in Flag				
Post-Mortem				
Other Machine Events:				

From: BISU of: Date:

For more information about the installation: Marc.VandenEynden@cern.ch Tel: 75378
For more information about the GMT system: Javier.Serrano@cern.ch Tel: 73486

x 6 

Summary done few weeks later...



Event name	ATLAS S.WENIG		LCHF AL Perrot		ALICE David Evans		CMS J.Salding		TOTEM M.Beile		LCHb R.Jacobsson	
	<= 5m	> 5m	<= 5m	> 5m	<= 5m	> 5m	<= 5m	> 5m	<= 5m	> 5m	<= 5m	> 5m
Safe Beam Flag (beam-1)	1	1	1	1	1		1		2		1	
Safe Beam Flag (beam-2)	1	1	1	1	1		1		2		1	
Stable Beam Flag	1	1	1				1		2		1	1
Movable_device_allowed_in	1	1	0				1		2		1	1
Post-Mortem	1	4	1		1		1		3		1	2
Nbr of Flags	4		3		2		4		4		4	
Nbr of CTR Counters	13		10		7		13		13		13	
Nbr of CTRV	2		2		1		2		2		2	
Nbr of CTDAD (Line Driver)		5	4			0		0		5		4



Despite some systems are not populated, VME crates chosen for having generic solution



Received requests for Point 1



GMT Config. for the experiments: Summary of received requests / LEADE Meeting 4th Feb.08 / B.P.

Event name	Hw signal needed (Yes/No)	Nbr of connection with cable length		Comments:
		<= 5m	> 5m	
Safe Beam Flag (beam-1)	Yes	1	1	
Safe Beam Flag (beam-2)	Yes	1	1	
Stable Beam Flag	Yes	1	1	
Movable_device_allowed_in Flag	Yes	1	1	
Post-Mortem	Yes	1	4	
Other Machine Events:				

From: S. WENIG	BISU of: ATLAS	Date: 20. 12. 2007
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VME crate installed in US151 (rack 4Y.02.03.A1)

	ATLAS	LHCf
Nbr of Timing card (CTRV)	2	2
Nbr of Line Driver (CTDAD)	5	3

Event name	Hw signal needed (Yes/No)	Nbr of connection with cable length		Comments:
		<= 5m	> 5m	
Safe Beam Flag (beam-1)	Yes		1	
Safe Beam Flag (beam-2)	Yes		1	
Stable Beam Flag	Yes		1	
Movable_device_allowed_in Flag	No		0	
Post-Mortem	Yes		1	
Other Machine Events:				
Safe Injection Beam Flag	Yes			IF available

From: A.L. Perrot	BISU of: LHCf	Date: 14/01/08
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13 (5+8) connections for ATLAS
&
5 (0+5) connections for LHCf

Event name	Hw signal needed (Yes/No)	Nbr of connection with cable length		Comments:
		<= 5m	> 5m	
Safe Beam Flag (beam-1)	YES	YES		
Safe Beam Flag (beam-2)	YES	YES		
Stable Beam Flag	NO			
Movable_device_allowed_in Flag	NO			
Post-Mortem	YES	YES		
Other Machine Events:				

From: David Evans	BISU of: ALICE	Date: 14/12/07
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VME crate installed in SX2/CR4 (rack X07)

	ALICE
Nbr of Timing card (CTRV)	1
Nbr of Line Driver (CTDAD)	0

3 (short) connections



Received requests for Point 5



GMT Config. for the experiments: Summary of received requests / LEADE Meeting 4th Feb.08 / B.P.

Event name	Hw signal needed (Yes/No)	Nbr of connection with cable length		Comments:
		<= 5m	> 5m	
Safe Beam Flag (beam-1)	Yes	1		AND (beam1, beam2)
Safe Beam Flag (beam-2)		1*		Combined with above
Stable Beam Flag	Yes	1		AND (beam1, beam2)
Movable_device_allowed_in Flag	Yes	1		OR (beam1, beam2)
Post-Mortem	Yes	1		
Other Machine Events:				
Present Flag	Yes	1		OR (beam1, beam2)
Unstable Flag	Yes	1		
"InjectionThresholdHigh Flag"	Yes	1		New flag indicating that the injection threshold is set high ($\sim 10^{11}$) for inject-dump studies, as discussed in MPWG and LPC.
Nobeam Flag	Yes	1		
Nomode Flag	Yes	1		

(*) Combined Safe Beam Flag not existing

From: Jeff Spalding Jeffrey.Spalding@cern.ch	BISU of: CMS	Date: Jan 23, 2008
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VME crate installed in USC55 (rack S1E8)

	CMS	Totem
Nbr of Timing card (CTRV)	2	2
Nbr of Line Driver (CTDAD)	0	5

Event name	Hw signal needed (Yes/No)	Nbr of connection with cable length		Comments:
		<= 5m	> 5m	
Safe Beam Flag (beam-1)	Y	0	2	"Totem Motorization" + "Totem Trigger"
Safe Beam Flag (beam-2)	Y	0	2	" + "
Stable Beam Flag	Y	0	2	" + "
Movable_device_allowed_in Flag	Y	0	2	" + "
Post-Mortem	Y	0	3	" + " + Totem Electronics
Other Machine Events:				

5* connections for CMS
&
11 connections for TOTEM

From: Mario Deile & Walter Snoeys	BISU of: TOTEM	Date: 1st Feb. 08
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Event name	Hw signal needed (Yes/No)	Nbr of connection with cable length		Comments:
		<= 5m	> 5m	
Safe Beam Flag (beam-1)	Y	1	0	
Safe Beam Flag (beam-2)	Y	1	0	
Stable Beam Flag	Y	1	1	
Movable_device_allowed_in Flag	Y	1	1	
Post-Mortem	Y	1	2	
Other Machine Events:				



VME crate installed in UX85 (rack D3B09)

	LHCb
Nbr of Timing card (CTRV)	2
Nbr of Line Driver (CTDAD)	4

9 (5+4) connections

From: R.Jacobson	BISU of: LHCb	Date: 13 Dec.07
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About a “Safe Injection” Flag...



GMT Config. for the experiments: Summary of received requests / LEADE Meeting 4th Feb.08 / B.P.

POST-mortem	Yes	1	
Other Machine Events:			
Safe Injection Beam Flag	Yes		IF available

InjectionThresholdHigh Flag	Yes	1		New flag indicating that the injection threshold is set high ($\sim 10^{13}$) for inject-dump studies, as discussed in MPWG and LPC.
Nobeam Flag	Yes	1		
Nomode Flag	Yes	1		

From: A.L. Perrot	BISU of: LHCF	Date: 14/01/08
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From: Jeff Spalding Jeffrey.Spalding@cern.ch	BISU of: CMS	Date: Jan 23, 2008
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- New name now: SPS Probe Beam Flag
- Required for safe beam transfer between SPS and LHC
- Produced and managed by the SMP system
- Flags only used by the Extraction Beam Interlock system => direct link
- Discussed and agreed in MPWG as essential part for a safe SPS Extraction
=> corresponding EDMS document in preparation
- (for the time being) **Not distributed by LHC-GMT**

➤ *4th Feb.08:*

LEADE Meeting

➤ *1 week later:*

Green light from EXP for implementing the proposed solution



➤ AB/CO prepares the necessary Hw material, manages the Ethernet connections, and handles the settings configuration for each CTRV.

➤ In parallel, EXP manage the installation of the cables



➤ *Proposed Milestone:*

Having the 4 systems ready by end of April 2008 for performing preliminary tests (=> simulation with fake Flags)



End:



That's all !