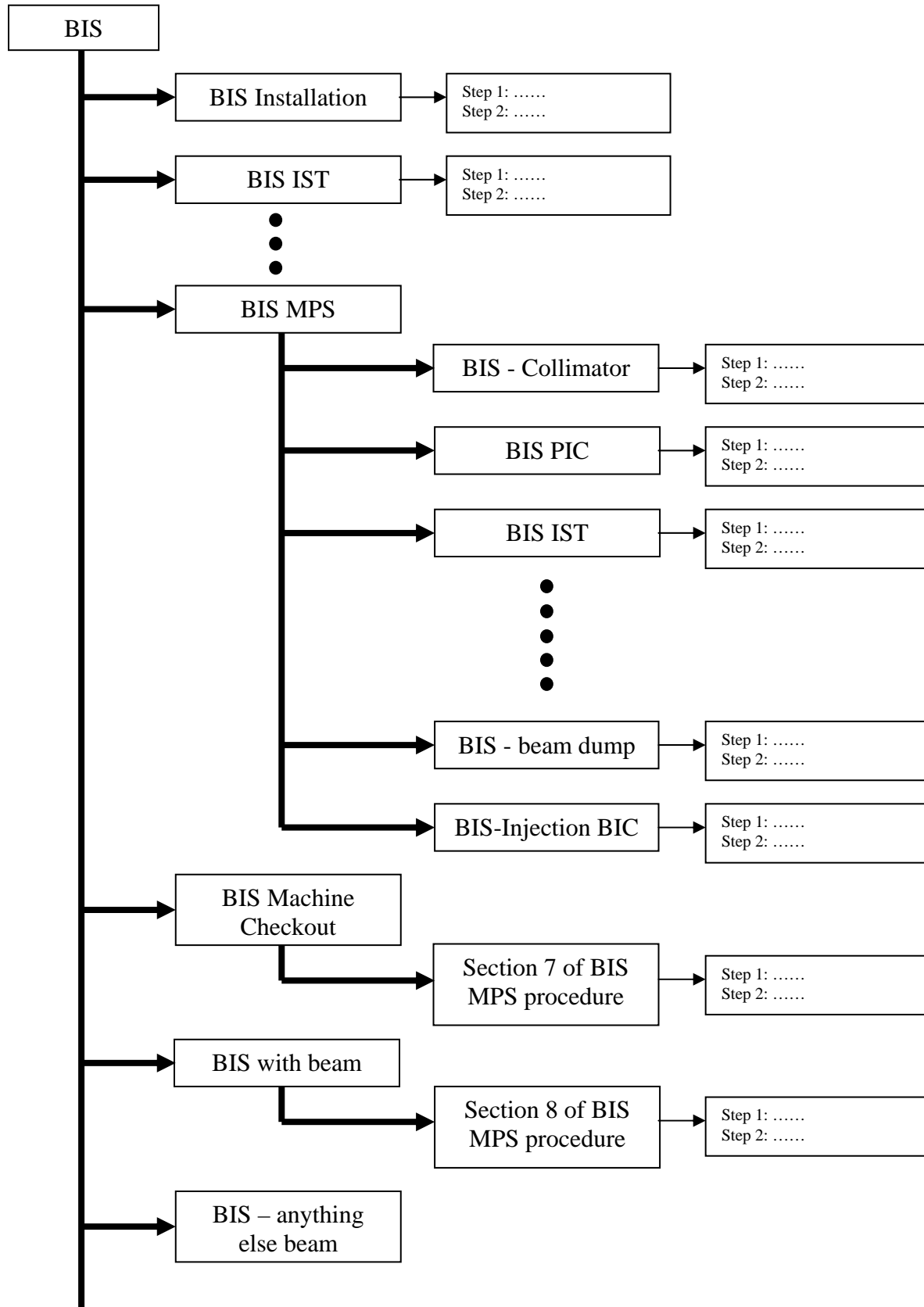


BIS MTF structure



BIS-MPS Commissioning: The list of steps as taken from the BIS MPS procedure

Note that for test A the steps apply to 18 different child systems (see table on next page)

Note: This is section 6 of the BIS MPSC note.

Test A:

- Connection and signal transmission of User system inputs to CIBU/BIC
- Validation of BIC response, history buffers, and transmission of outputs
- Measure and record voltage and cable length data in BIS database

Test B:

- Validation of the link, functional response, and logging between SIS and BIS

Test C:

- Validation of the link, functional response, and logging between SMPC and BIS

Test D:

- Validation of BEAM_PERMIT loops
- Validation of transmission of BEAM Permit states to MKD
- Validation of the link, functional response, and logging between BIS and MKD
- Measure and record timing alignment of BIS to LBDS

Test E:

- Validation of transmission of BEAM Permit states to Injection Interlock
- Validation of the link, functional response, and logging between BIS and Injection Interlock
- Measure and record timing alignment of BIS to Injection BIC

BIS-MPS Machine Checkout: The list of steps as taken from the BIS MPS procedure

- Validation of functionality of Beam permit loops

Note: This is section 7 of the BIS MPSC note.

BIS-MPS Commissioning with Beam: Steps as taken from the BIS MPS procedure

- MPS functionality and User system - BIS checkout with beam
- Verification of Safe Beam Flag transmission through the GMT
- Validation of the Safe Beam Flag transition and Interlock logic when intensity increases above the Safe beam flag threshold.

Note: This is section 8 of the BIS MPSC note.

List of different user systems that have to be commissioned with the BIS

Note: the set of steps outline above (for MPSC) is applied to each user system separately

System Name	Connections(*)	Signals	Signal Notes	Test
Collimators	42	126	_A and _B and _INFO	A
Power Interlock Controllers	32	96	_A and _B and _INFO	A
Vacuum	30	90	_A and _B and _INFO	A
Beam Loss Monitor System	16	48	_A and _B and _INFO	A
Fast Magnet Current Change Monitor	12	36	_A and _B and _INFO	A
Warm Magnet Interlocks	8	24	_A and _B and _INFO	A
Beam Screens	9	27	_A and _B and _INFO	A
Kicker Systems	4	12	_A and _B and _INFO	A
RF	4	12	_A and _B and _INFO	A
ATLAS & LHCf	5	15	_A and _B and _INFO	A
CMS & TOTEM	5	15	_A and _B and _INFO	A
ALICE	2	6	_A and _B and _INFO	A
LHCb	3	9	_A and _B and _INFO	A
Beam Lifetime	2	6	_A and _B and _INFO	A
Beam Excursion	4	12	_A and _B and _INFO	A
Access System	1	3	_A and _B and _INFO	A
Operator Push-Buttons	2	6	_A and _B and _INFO	A
LHC Sequencer	2	6	_A and _B and _INFO	A
Software Interlock System	2	4	_A and _B	B
Safe Beam Flag	32	64	_A and _B	C
Beam Dump	2	4	_A and _B	D
Injection BIC	2	4	_A and _B	E
Totals	221	625		