

(Existing) Component irradiation brainstorming

Aims?

Devices to test?

What irradiation facilities to use?

What/how to measure?

Timescales?

(Existing) Component irradiation brainstorming

Aims?

Validate/compare components to SLHC fluences and doses

Catalogue and (try to) understand radiation effects

Evolve test procedures

(Existing) Component irradiation brainstorming

Devices to test?

All front-end, plus cables, connectors that are exposed to radiation

Lasers

Photodiodes

Fibre-optics

'full' links

Electronics

Hybrids

SMDs

Connectors

(share with other system parts testing.....)

plus any other related parts:

Glues

Plastics

(Existing) Component irradiation brainstorming

What irradiation facilities to use?

	γ (^{60}Co , X)	n	p (or π)	Ions
Total dose	X		X	
displacement		X	X	
SEE		X	X	X

(Existing) Component irradiation brainstorming

Timescales?

similar to LHC development cycle?

2005-6 first tests

high fluence
high dose

aim to:

find potential 'showstoppers'
develop procedures

2006 onwards (N years, N?)

more systematic tests

- in this current generation, there was time to make systematic tests
'system' tests

materials testing

(Existing) Component irradiation brainstorming

Aims?

Validate/compare components to SLHC fluences and doses
Catalogue and (try to) understand radiation effects
Evolve test procedures

Devices to test?

All front-end, plus cables, connectors exposed

lasers, photodiodes, fibre-optics, electronics, hybrids, SMDs, connectors
plus any other related parts: (glues, plastics)

What irradiation facilities to use?

What/how to measure?

in-situ vs before/after?
characteristics to measure?
fluences and doses?
test final operating condition?
materials issues?
 packaging
 plastics

	γ (^{60}Co , X)	n	p (π)	lons
Total dose	X		X	
displacement		X	X	
SEE		X	X	X

Timescales?

identify showstoppers (1-2 yrs)
systematic tests (several years)