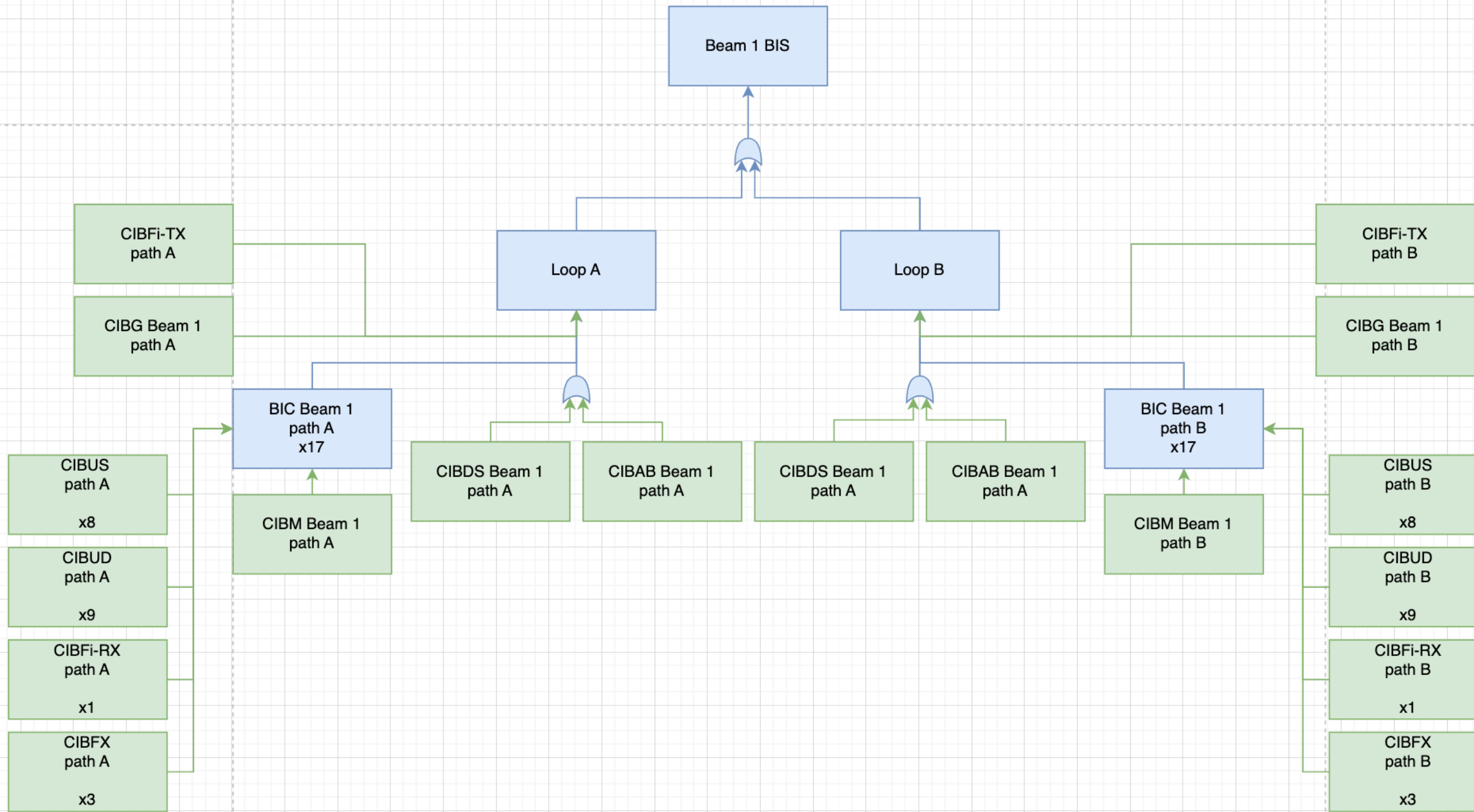


BISv2 Global Model

BISv2 Reliability Study Progress Meetings #8



Pessimistic model

- **Each of the 17 BICs:**
 - 17 CIBUS,
 - CIBFI-Rx,
 - 3 CIBFX,
 - CIBM.
- **Triggering via one of the two: CIBDS or CIBAB.**
- **Two redundant loops.**

90.1%
reliability after
1000 years

Inspections only after a full year.

Exact model

- **17 BIC:**
 - Number of CIBU, CIBFi-RX, CIBFX and CIBF cards adjusted for each BIC.
- **Triggering via one of the two: CIBDS or CIBAB.**
- **Two redundant loops.**

Inspections only after a full year.

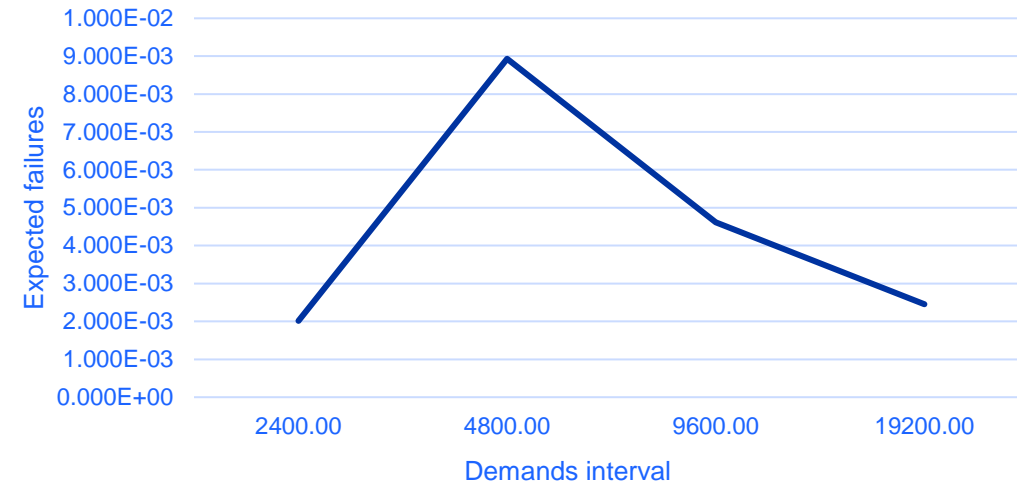
98.9%
reliability after
1000 years

Model with realistic inspections

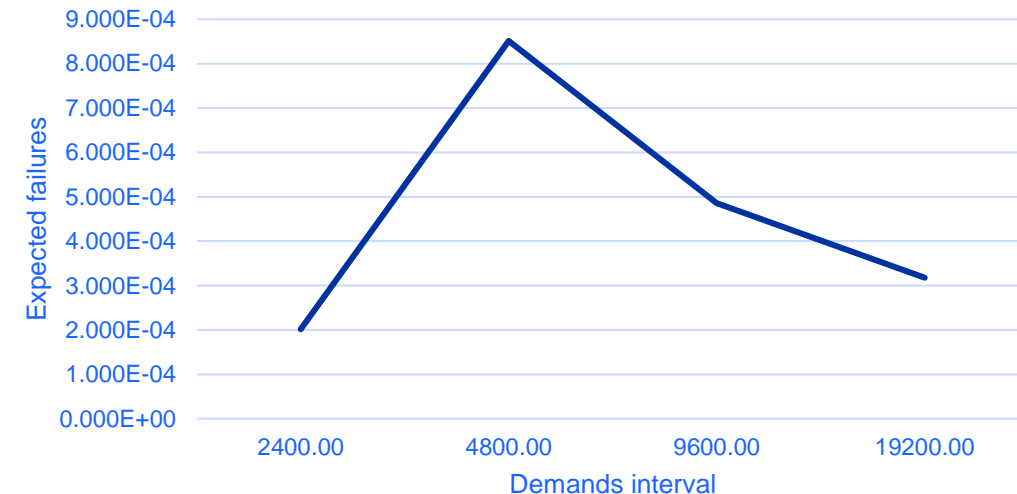
- **17 BIC:**
 - Up to 17 CIBUS,
 - CIBFI-Rx,
 - Up to 3 CIBFX,
 - **CIBM.**
- **Triggering via one of the two: CIBDS or CIBAB.**
- **Two redundant loops.**

Inspections every **12 hours** for cards in the loop, **every year** for individual BICs.

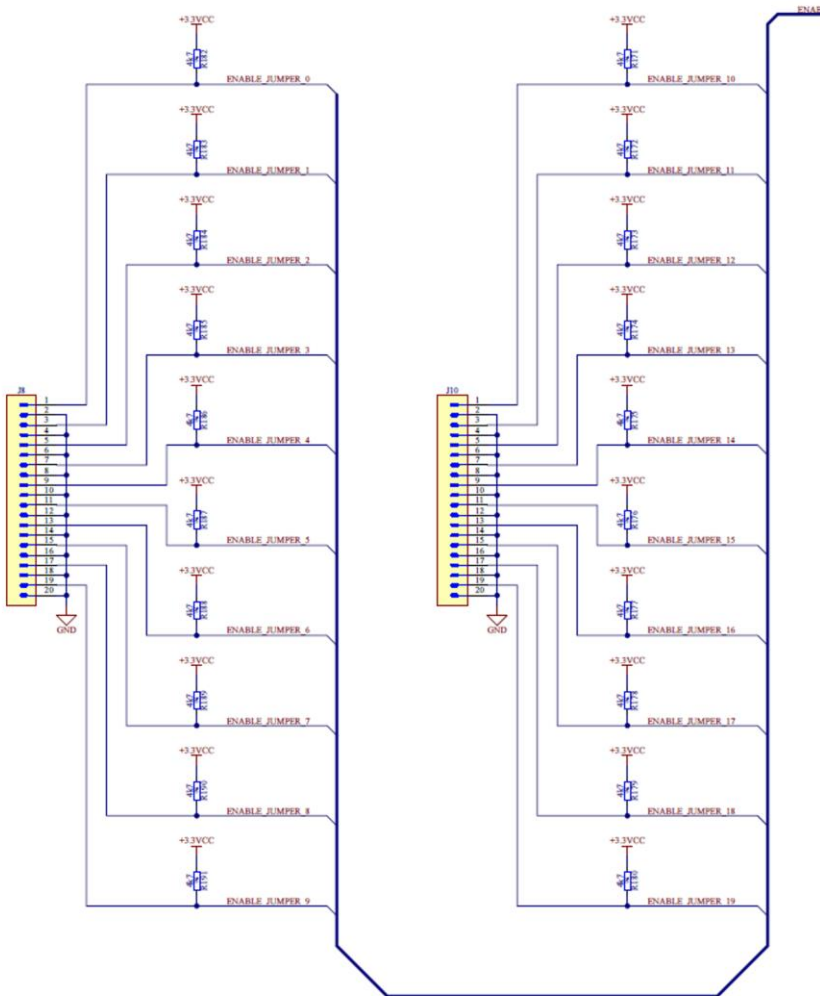
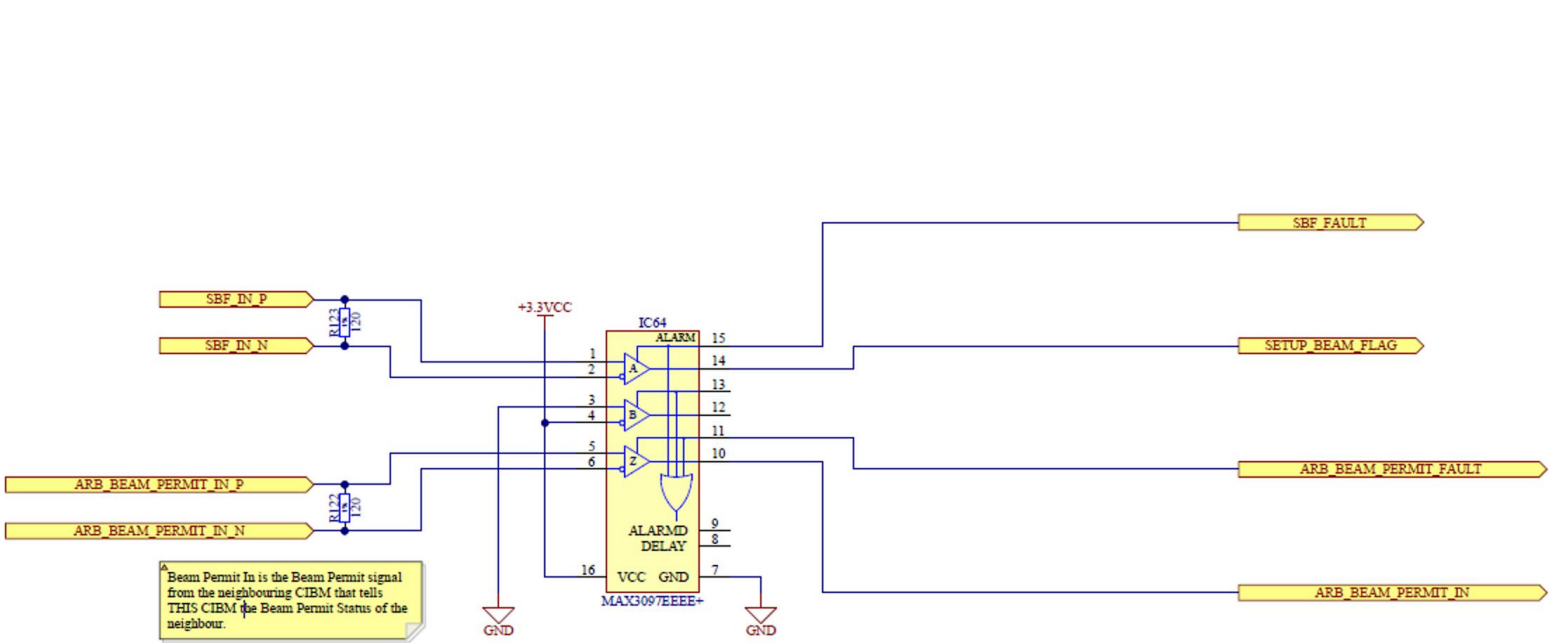
Failures after 1000 years - pessimistic model



Failures after 1000 years - exact model



CIBM Blind failures



- RS-485 Receiver with Fault Detection; open, output stuck low, shorted
- Contacts (enable jumpes page; J8, J10) short
- Resistors (enable jumpers page) open



home.cern

Model with ideal inspections

- **17 BIC:**
 - Number of CIBU, CIBFi-RX, CIBFX and CIBF cards adjusted for each BIC.
- **Triggering via one of the two: CIBDS or CIBAB.**
- **Two redundant loops.**

Inspections considered total – repairing all blind failures in all cards.

99.998%
reliability after
1000 years