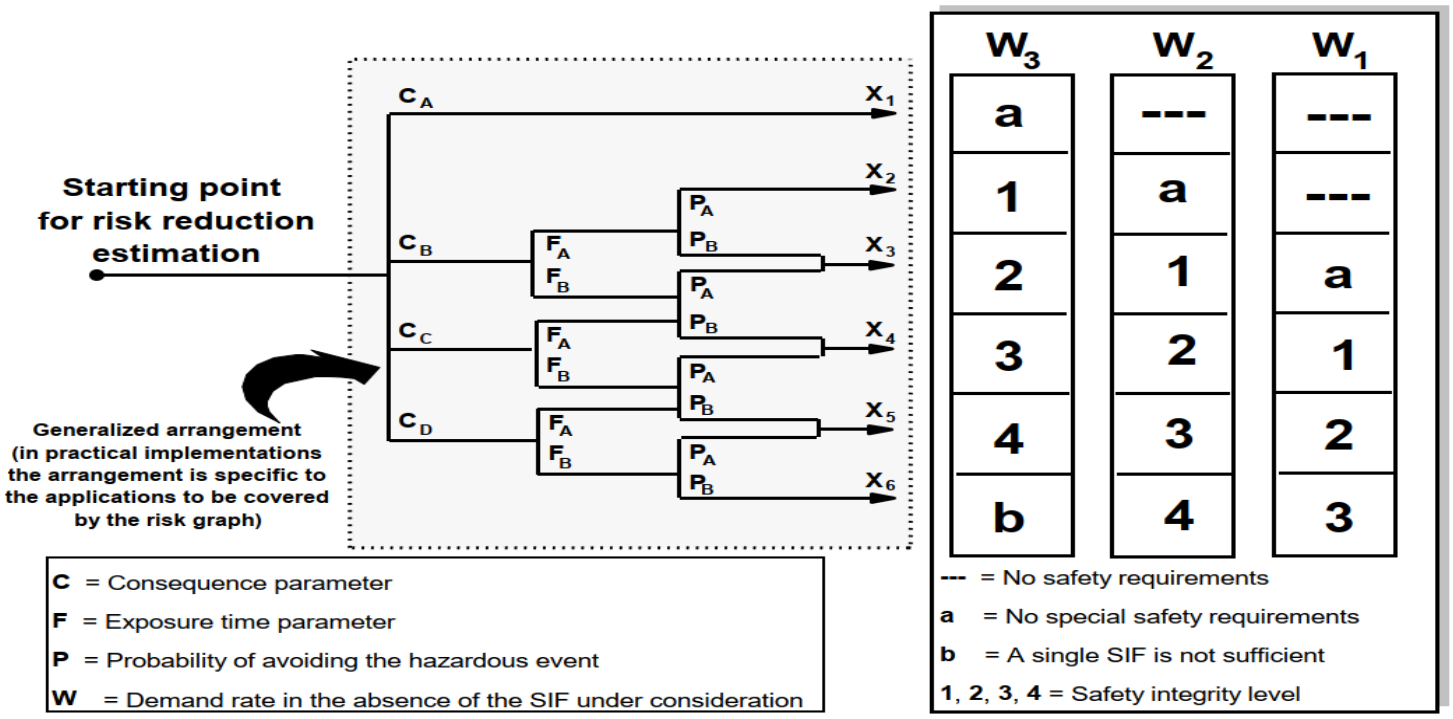
# Risk classification for CERN accelerators

- Based on so-called risk matrices (LHC below)
- Clear availability targets for CERN machines, e.g. 80% for LHC

| | [ 1m - 20m ) | [ 20m - 1h ) | [ 1h - 3h ) | [ 3h - 6h ) | [ 6h - 12h ) | [ 12h - 24h ) | [ 24h - 2d ) | [ 2d - 1w ) | [ 1w - 1M ) | [ 1M - 1Y ) | [ 1Y - 10Y ) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/H | U | U | U | U | U | U | U | U | U | U | U |
| 1/Shift | ~ | U | U | U | U | U | U | U | U | U | U |
| 1/Day | A | ~ | ~ | ~ | U | U | U | U | U | U | U |
| 1/Week | A | A | A | A | ~ | ~ | U | U | U | U | U |
| 1/Month | A | A | A | A | A | A | ~ | U | U | U | U |
| 1/Year | A | A | A | A | A | A | A | A | U | U | U |
| 1/10Years | A | A | A | A | A | A | A | A | A | U | U |
| 1/100Years | A | A | A | A | A | A | A | A | A | A | U |
| 1/1000Years | A | A | A | A | A | A | A | A | A | A | A |

# Risk Graph Method




- Provide scale only for parameter C (4 categories), not full risk assessment framework

# Risk classification for SM18

- Availability-based assessment not directly applicable to SM18
- Dependency on other tests/projects should be accounted for
- = more qualitative severity scale
  - Following input from Markus:
  - C1 = minor impact on test programme (delay of few minutes to few hours)
  - C2 = significant impact on test programme (delay of several hours to few days)
  - C3 = major impact on test programme (delay of several days to 4 weeks)
  - C4 = potential impact on HL-LHC project schedule (delay of 4 weeks to several months)

# Risk classification for SM18

- BE-ICS and SM18 team would like to converge asap on this
- Two possibilities:
  - We ‘approve’ the proposed scale
  - We recommend using a different risk assessment method, but this will require time
- The approach can be revised in the mid-long term for SM18 risk assessment