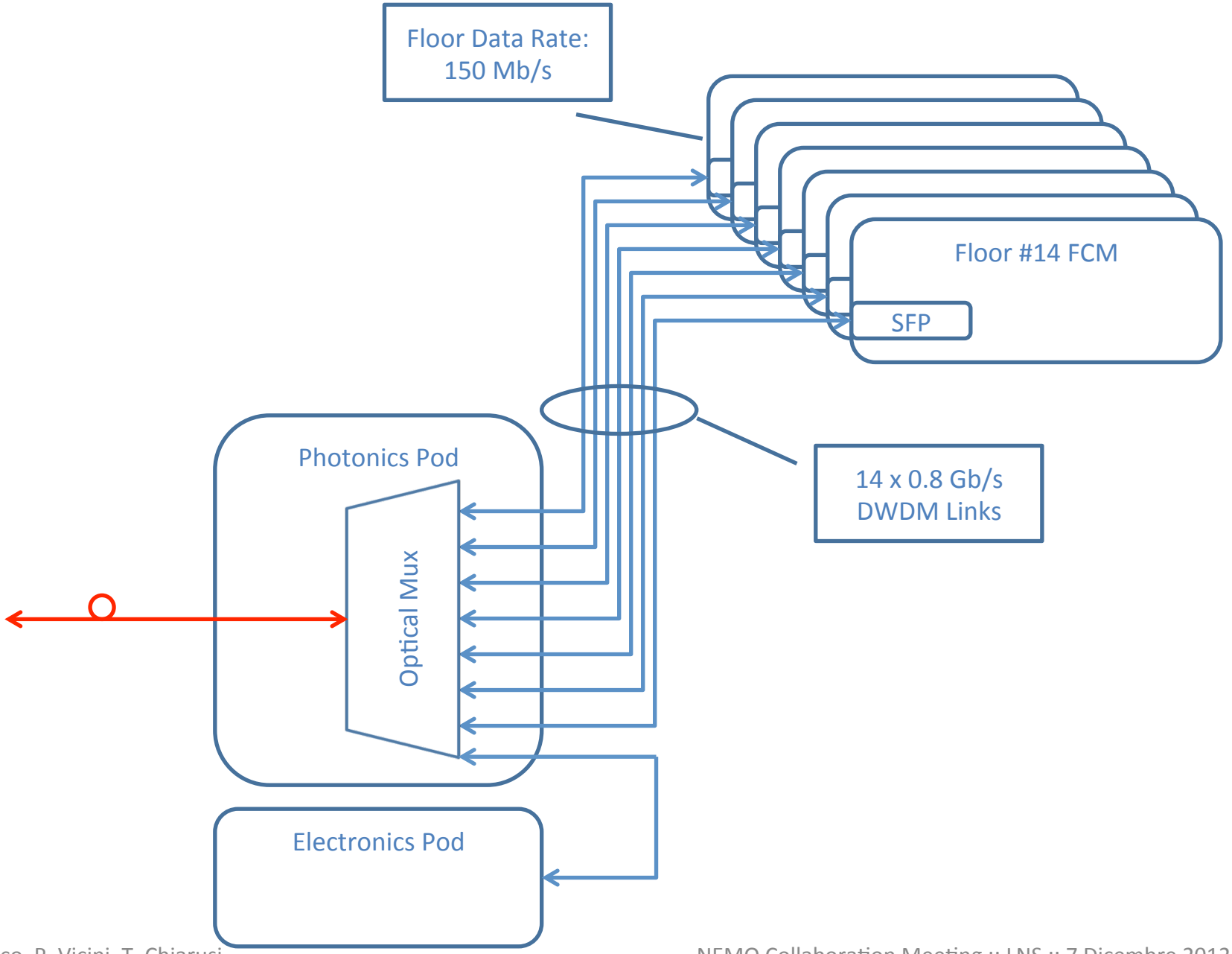
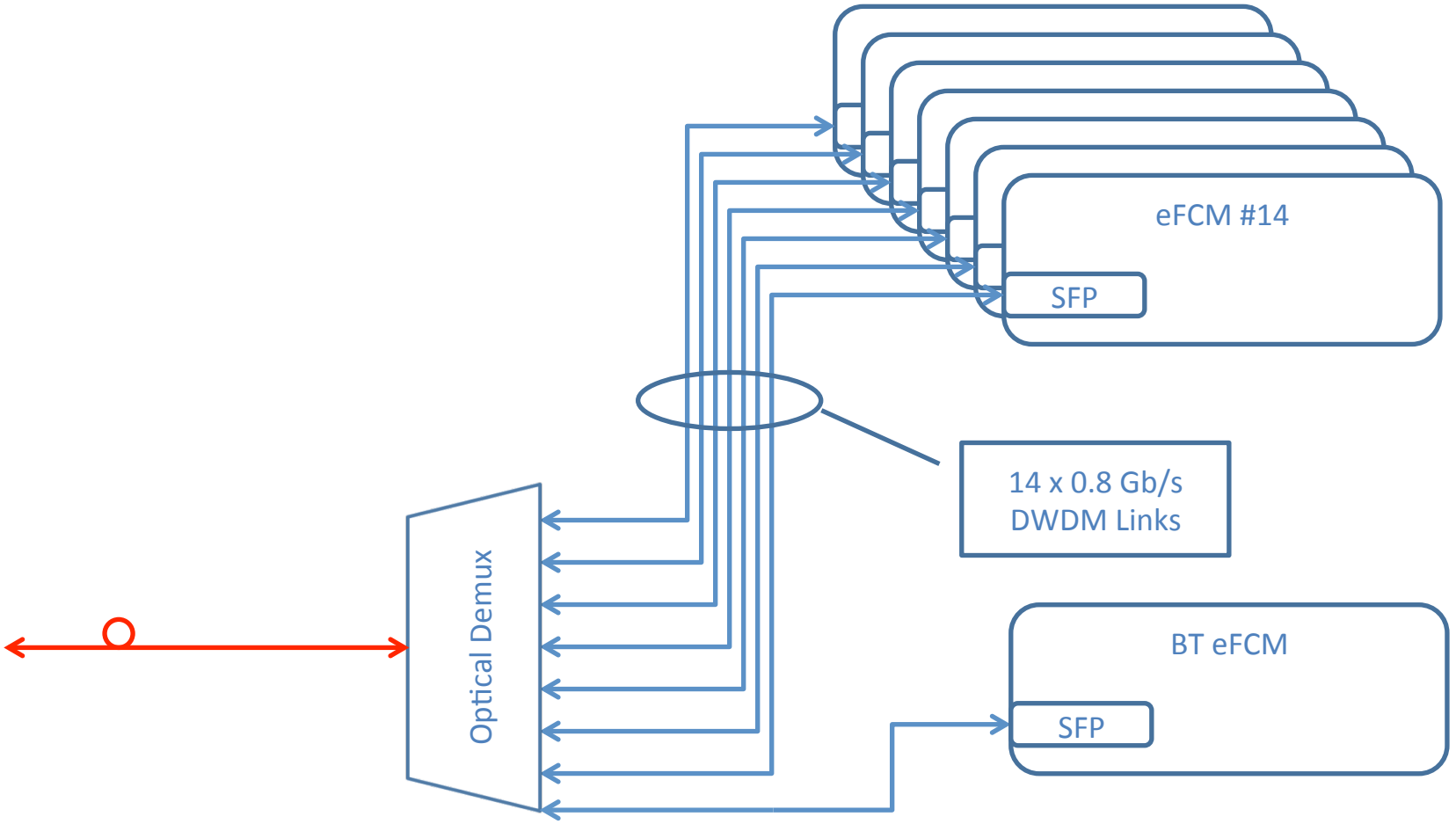
Fase3: R&D on Active Optical Mux

- Ne abbiamo parlato in passato riferendoci al progetto 10Gb/s…..
- Scopo:
  - riduzione del numero di “colori” per torre
  - maggior efficienza nell’uso della fibra (Mainstream)
  - riduzione dei costi
  - maggior flessibilita’del sistema di comunicazione di torre
  - maggior tolleranza ai guasti nella Base Torre
  - semplificazione del DAQ a terra (logistica, numero di canali, scalabilita’)
  - ottimizzazione del sistema di distribuzione del clock GPS

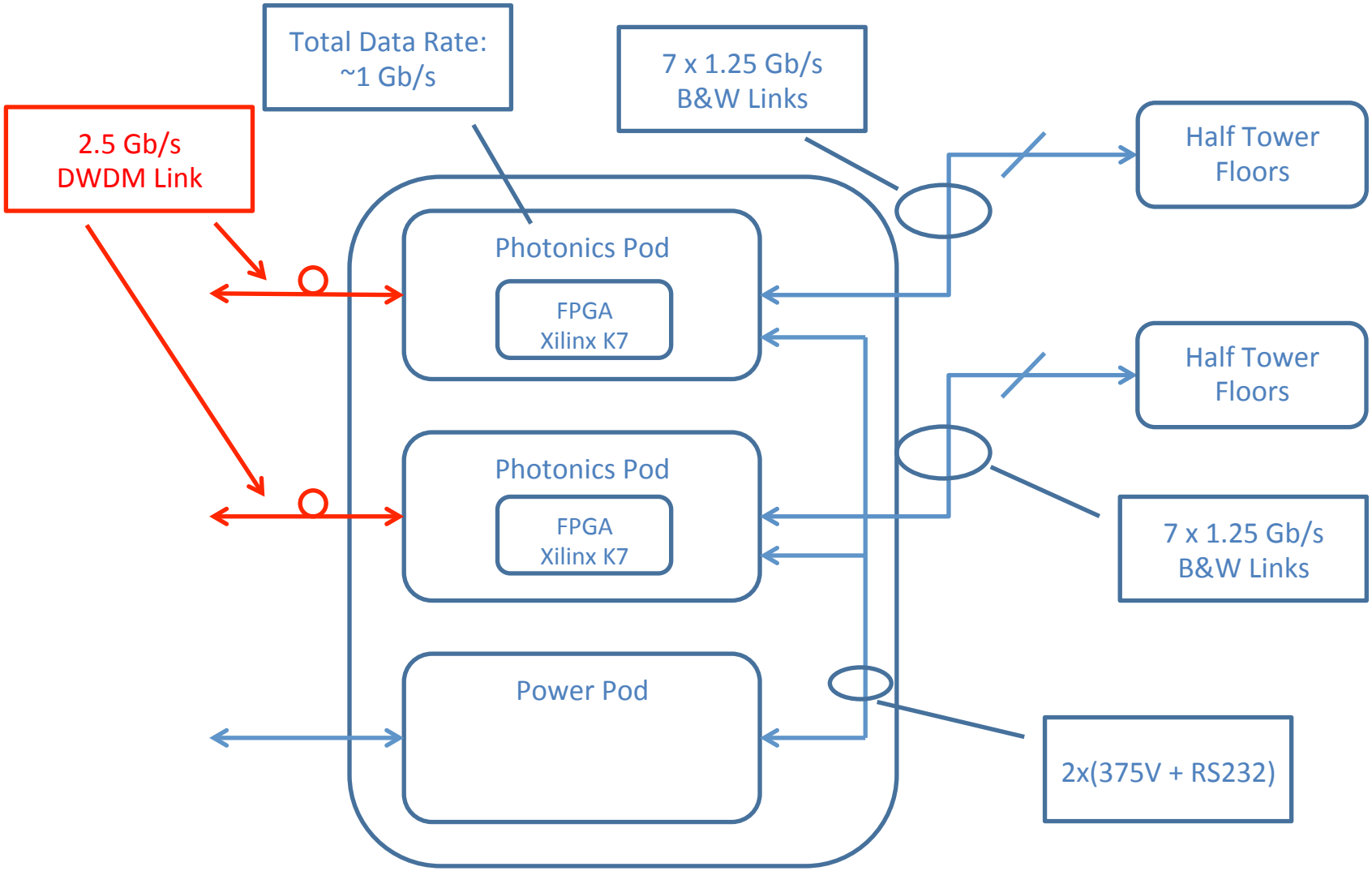
Fase3 Off-Shore Transmission Block Diagram



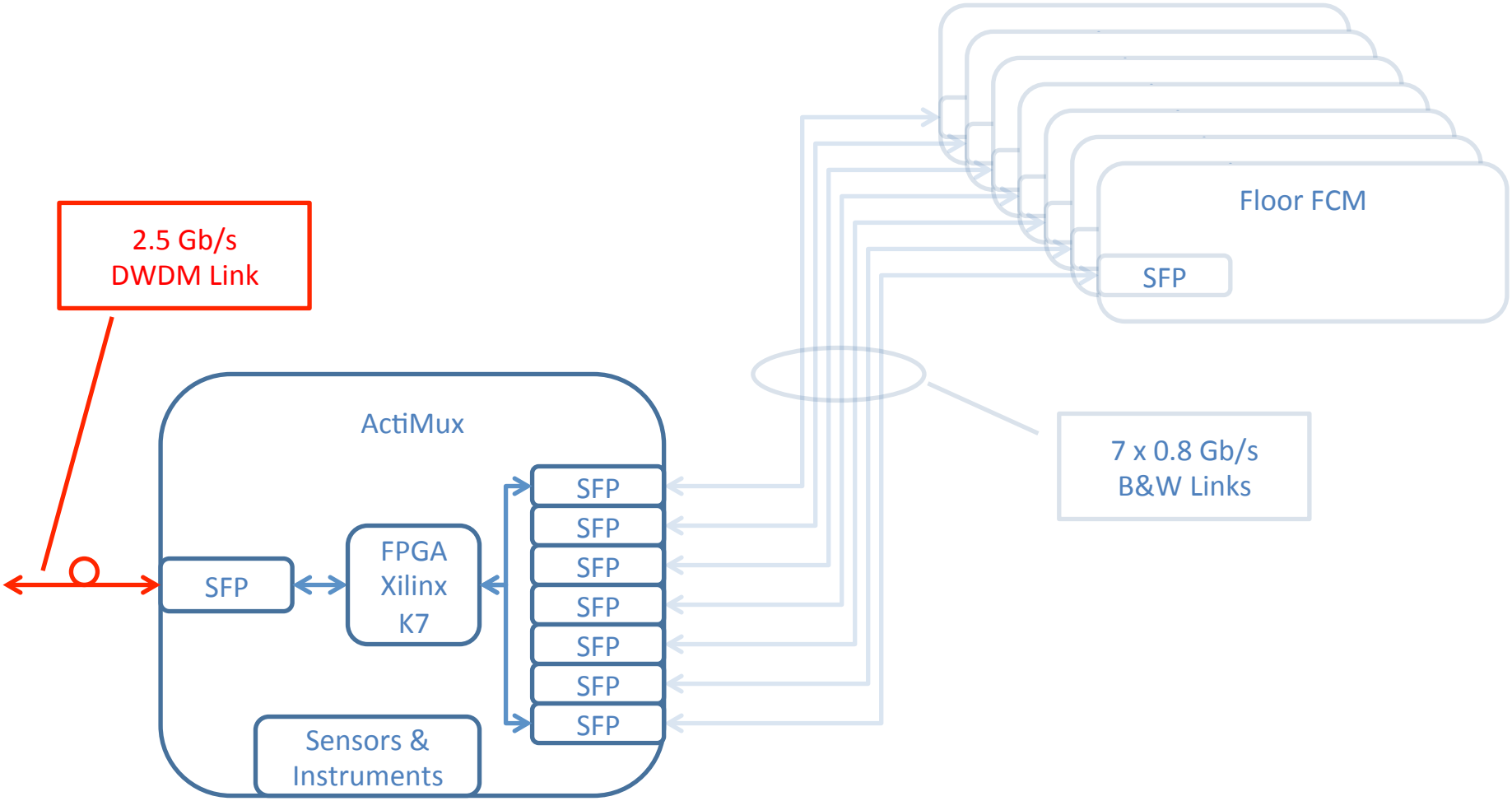
Fase3 On-Shore Transmission Block Diagram



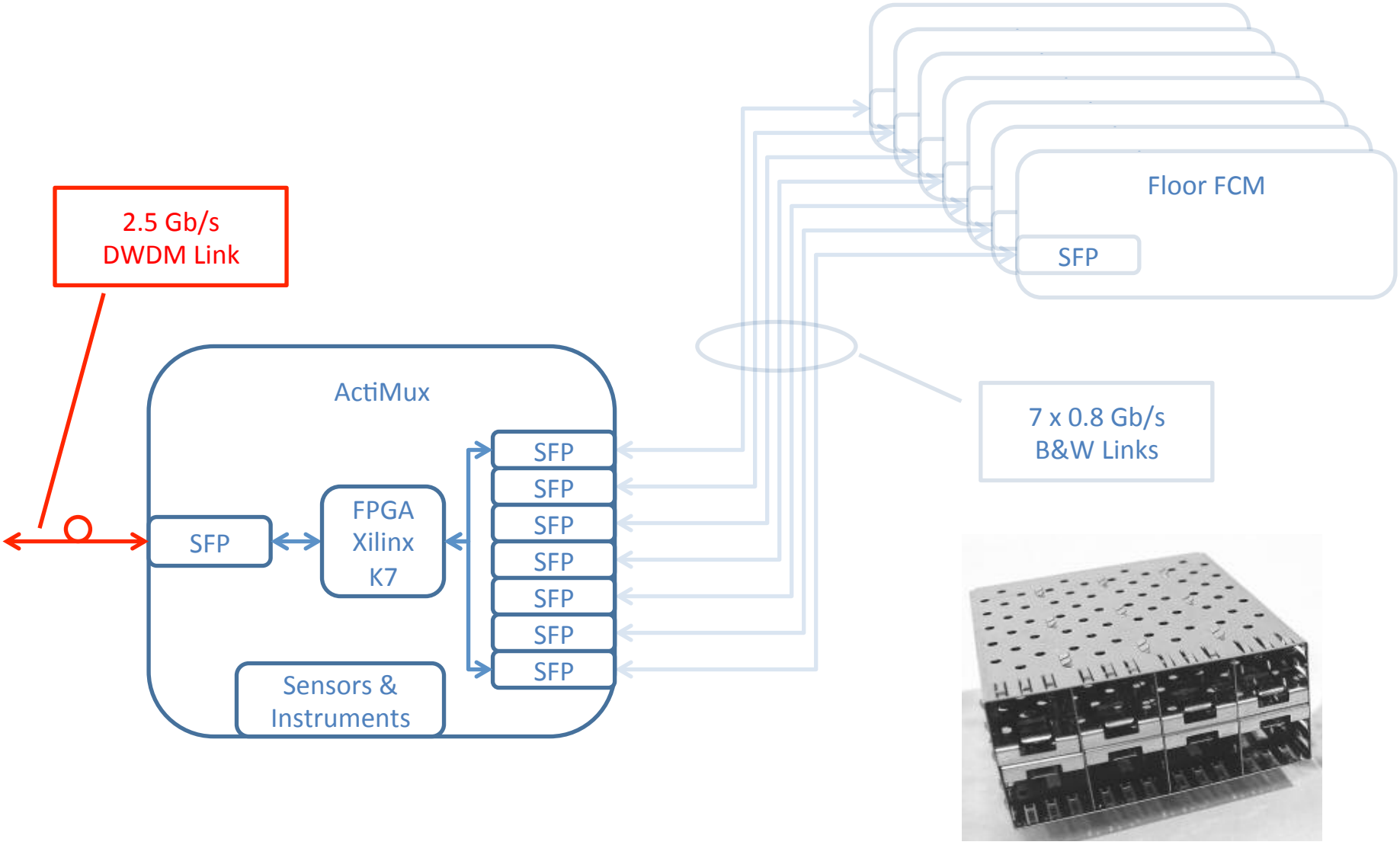
Fase3: Base Tower Active Optical Mux



Fase3: BT Photonics Pod



Fase3: BT Photonics Pod



TOWER PHOTONICS: ACTIVE OPTICAL MUX

STATUS UPDATE

KM3 COLLABORATION MEETING – LNS – CATANIA- 7/12/2012

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A. D'Amico

SUMMARY

- **MULTIPLEXING STRATEGIES: All-optical**
- **MULTIPLEXING STRATEGIES: Active Optical Mux @ tower base**
- **Infrastructure Capacity: All-optical vs. Active Optical Mux**

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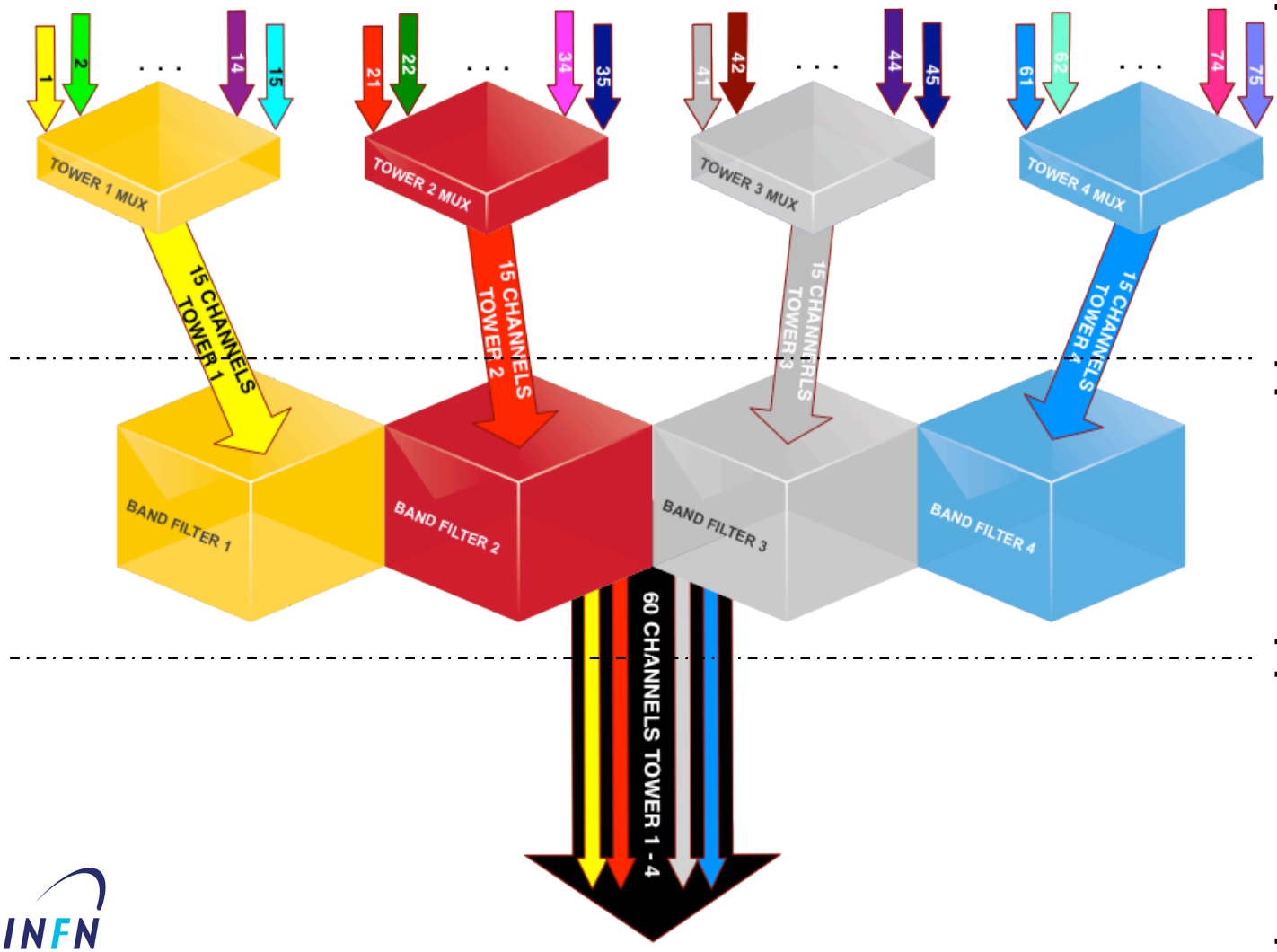
MULTIPLEXING STRATEGY: ALL-OPTICAL



Tower optical MUX
15 colours TX
+
15 colours RX
50 GHz grid

Junction Box
optical MUX
15 colours
each sub-band

Submarine Cable
4 towers over 2 fibres
(1 TX fibre + 1 RX fibre)
60 colours per fibre

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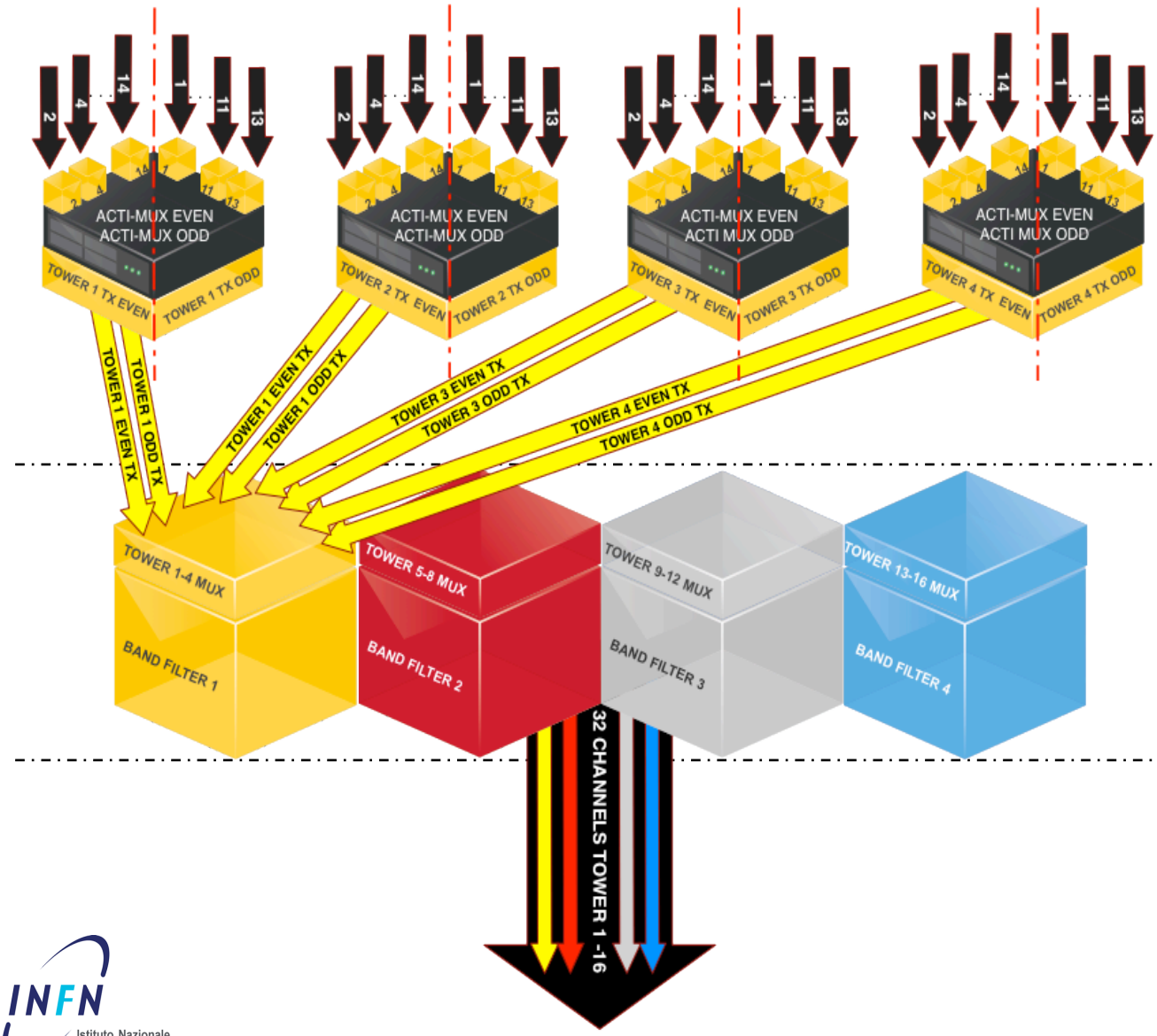
MULTIPLEXING STRATEGIES: ACTIVE OPTICAL MUX



Tower
active MUX
2 colours TX
+
2 colours RX
100 GHz grid

Junction Box
optical MUX
8 colours
each sub-band

Submarine Cable
16 towers over 2 fibres
(1 TX fibre + 1 RX fibre)
32 colours per fibre

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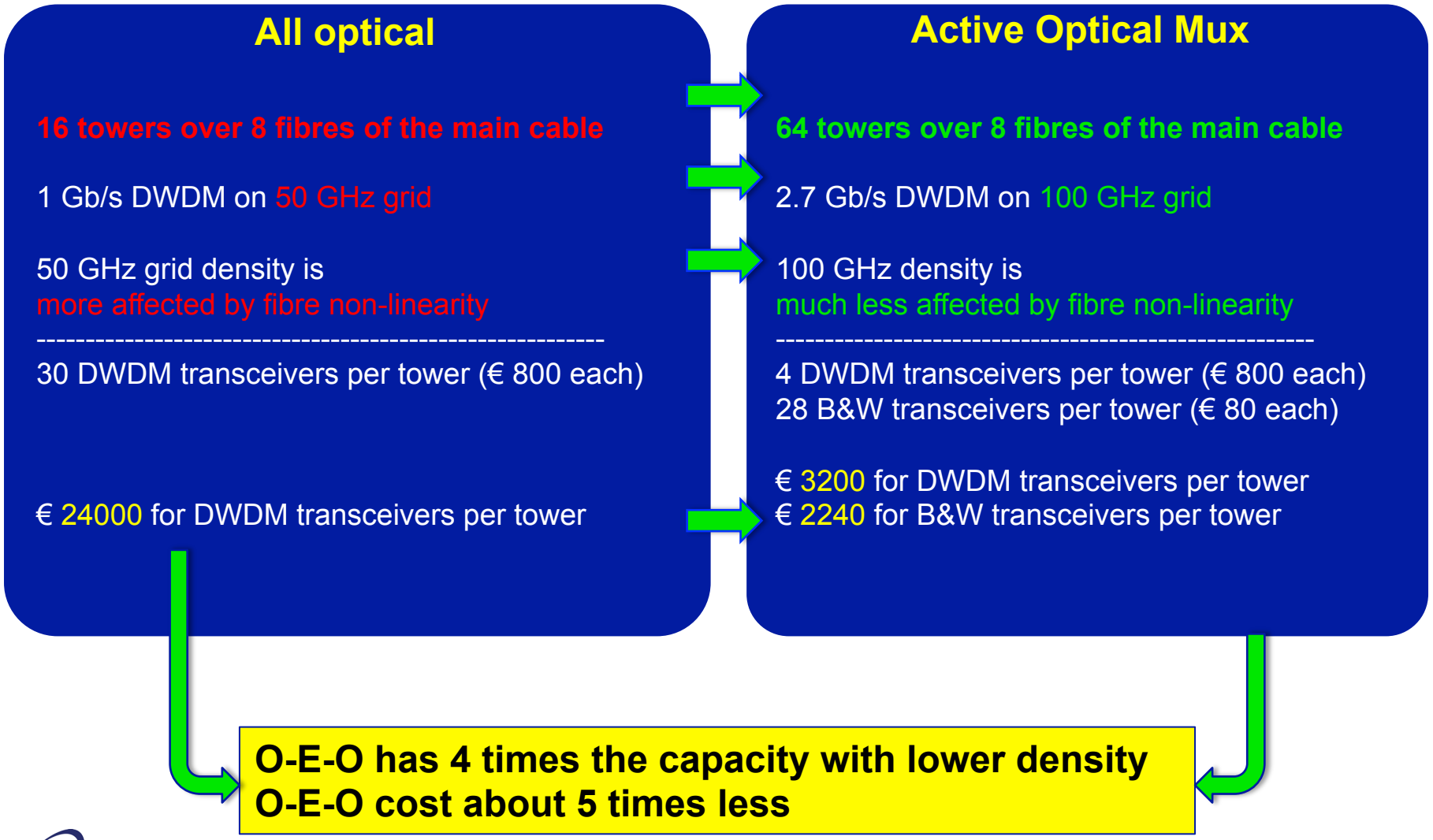
COMPARISON: ALL OPTICAL VS ACTIVE OPTICAL MUX



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