

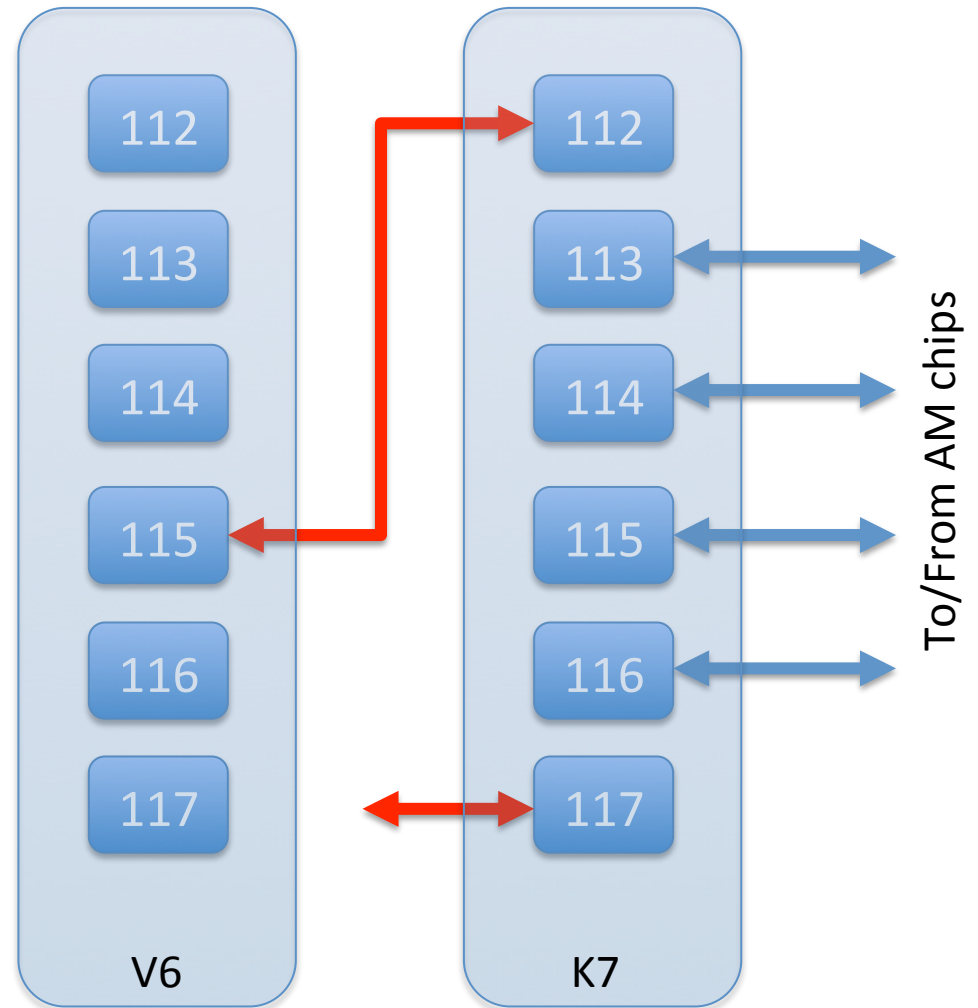
Aurora 64b/66b Links

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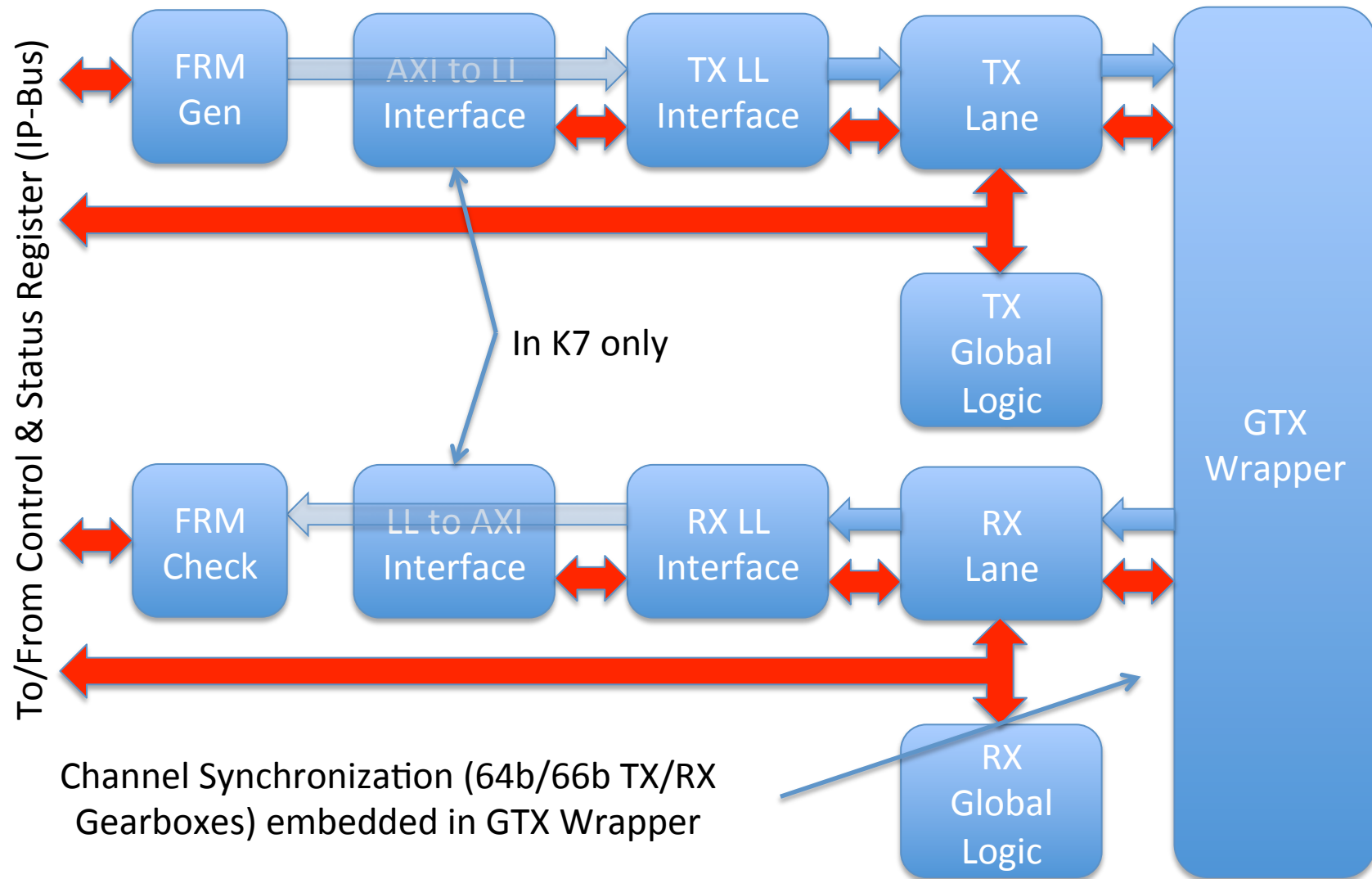
INFN - Pisa

Aurora Links

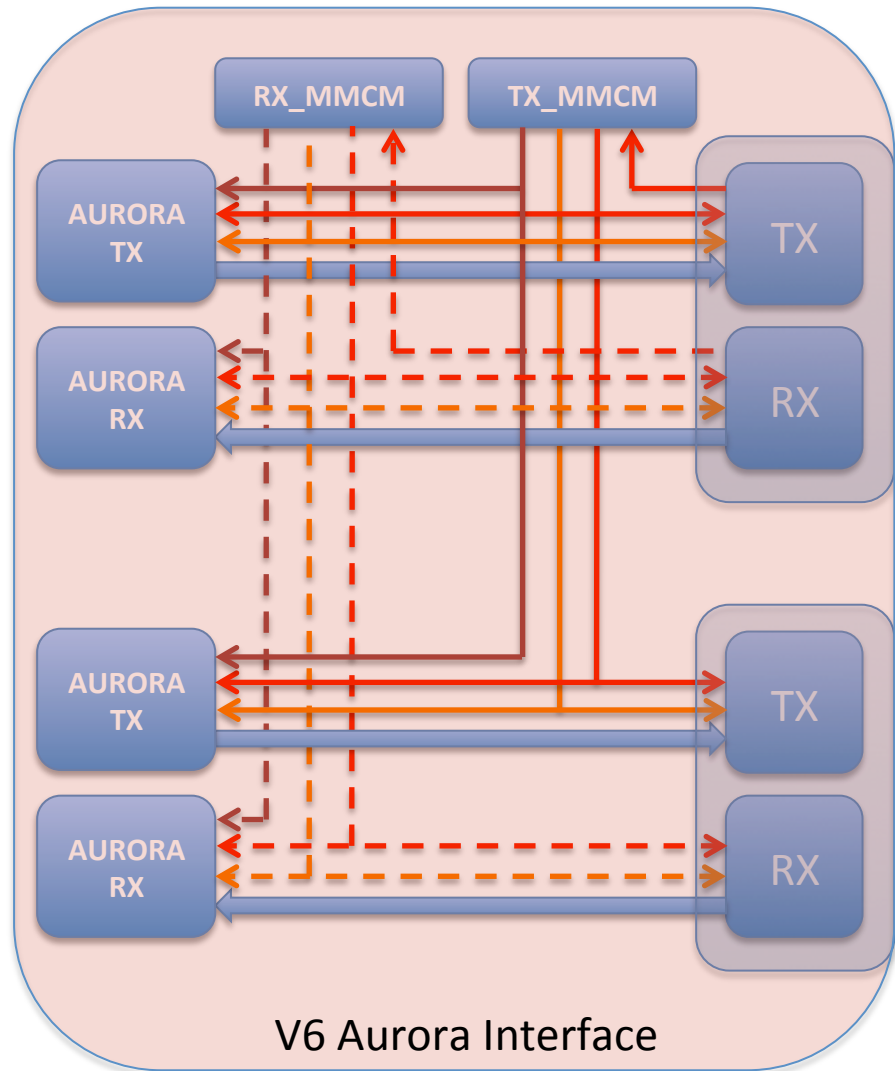
- 64b/66b Aurora protocol for high speed links between Pulsar and PRMs
- Interfaces generated by Wizard - Different Versions for Virtex6 and Kintex7
 - Virtex6 (V6) => v4_2_0 (Local-Link Interface)
 - Kintex7 (K7) => v9_3_1 (AXI Interface)
- K7 Aurora Interface modified in order to have the same Local-Link Interface to the FPGA logic in V6 and K7



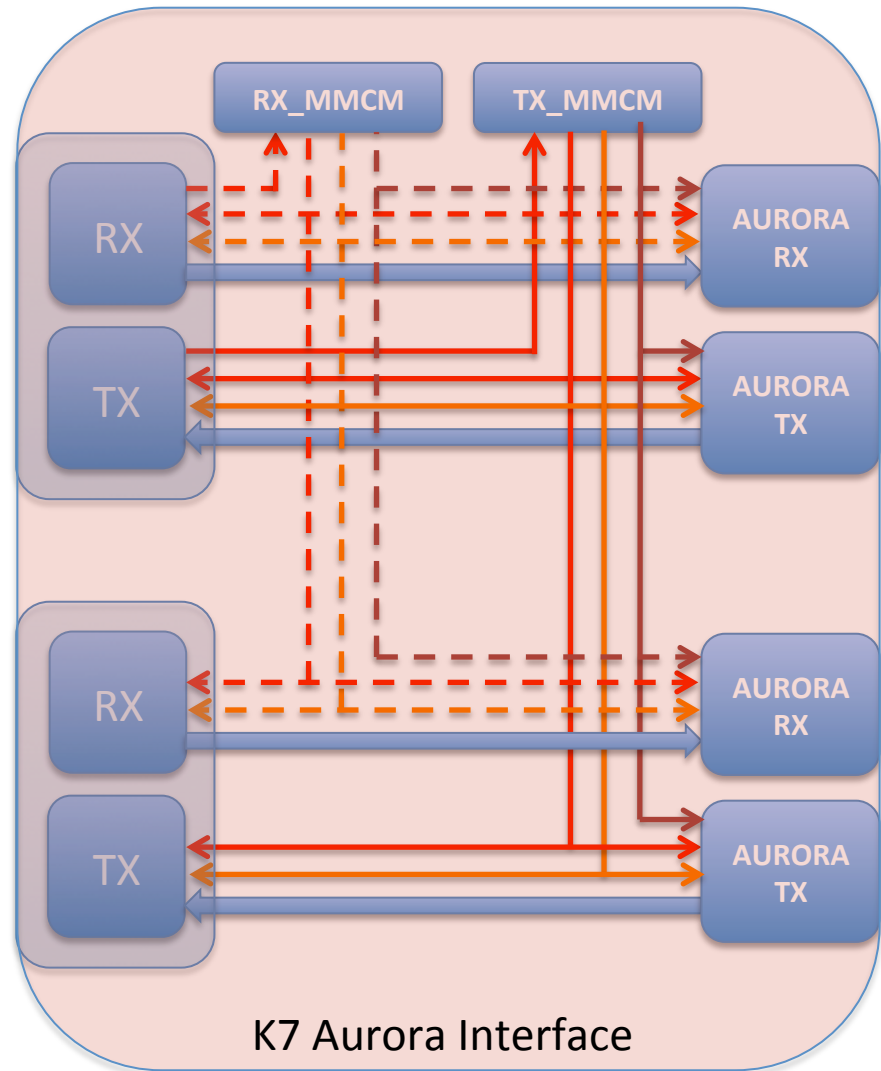
Aurora Interfaces



Aurora Links between V6 and K7



TX_MMCM Reference Clock = TX_OUTCLK



RX_MMCM Reference Clock = RX_RECCLK

Status & Plans

1. Generation of the Aurora interfaces and their integration in V6 and K7 FW (DONE)
2. Test of one lane with Frame Generators and Checkers on both V6 and K7 sides at different data rates (September)
3. Integration of 4 (3) Aurora Lanes (October)
4. Development of PRBF Encoder/Decoder modules (October)
5. Test with PRBF encoded stubs (November)

Further Studies

- GTX Settings
 - Different V6 and K7 GTX parameters => Consistency!
 - GTX Settings (e.g.: Front-End configuration parameters, PLL settings, ...) may strongly affect the system performance (i.e.: max data rate) => Test and comparison of different option!
- Aurora Capabilities => K-Blocks for control & monitoring?

5.2.9 User K-Block Codes

There are nine unassigned BTF values in Aurora 64B/66B for user applications. When an Aurora interface receives one of these blocks, it passes the BTF and the seven remaining octets in the block directly to the user application as a User K-Block. [Figure 5-8](#) shows the format of User K-Blocks. [Table 5-3](#) shows the BTFs that may be used for User K-Blocks, and the name associated with each BTF in the Aurora 64B/66B protocol.

