Description of functional blocks (from RB point of view):

<table>
<thead>
<tr>
<th>Block</th>
<th>Function</th>
<th>Priority</th>
</tr>
</thead>
</table>
| ALPIDE V3 Carrier / IB/OB Module | • receiving and encoding data from ALPIDE V3 single chip, IB or OB module  
• controlling configuration interface  
• providing clock signal  
• providing power supply                           | 1        |
| ALPIDE Power & Monitoring      | • generating power supply  
• controlling power supply value  
• measuring current  
• overcurrent protection circuit              | 1        |
| Clock generator                 | • generating clock signals for FPGA  
• possibility to connect a reference clock from outside  
• possibility to connect a clock signal source from outside | 1        |
| External I/O Header            | • access to unused FPGA I/Os  
• access to slow control interfaces           | 1        |
| Power Board Interface          | • extension connector to power board                                    | 1        |
| Power                          |                                                                           | 1        |
### Generating all required power supplies

**FMC Extension**
- extension connector to GBT mezzanine card

**Cypress FX3**
- external USB 3.0 interface

**Kintex-7 XC7K325T**
- receiving data from ALPIDE V3 Carrier/IB Module/OB Module
- configuration of ALPIDE V3 Carrier/IB Module/OB Module
- executing characterization tests

### Points to be discussed:

1. Do we want an "ALPIDE V3 Carrier" extension connector? Or we use "IB Module connector" + plus one extra connector to connect to the rest of ALPIDEs pins?
2. Advanced reconfiguration options. What external components do we need?

### The ITS Readout Board power-tree proposal:

*) it's a first proposal of power-tree, still some components are missing