

# Items for consideration (1)

- *Padding of data fields to 32-bits*
  - *Allow padding of the data field to the next 32-bit boundary*
  - *Data length give correct number of bytes to be transferred.*
  - *E.g. three bytes to be sent*
  - *Additional zero byte for padding to 32-bits could be added*
  - *Data length set to 3*
  - *Up to three pad bytes could be added without causing a data length error.*
  - *Data length is either exact number of bytes in packet*
  - *Or data length is 1, 2 or 3 less than number of data bytes in packet*
  - *Where number of data bytes is a multiple of 4.*
- *Recommendation is to NOT do this if we remove the data length from the replies.*

## *Items for consideration (2)*

- *Destination Device Type : Replaced by Destination Key ?*
  - *Destination key is a qualifier for the Memory Write address*
    - *Can be used to increase the protocol security (for configuration commands)*
    - *Can be used as a Memory Map key*
    - *Can be used as a Mailbox key*
- *Recommendation is to replace the destination Device Type by a Destination Key*

## *Items for consideration (3)*

- *Sending a reply if there is an error but not if there is no error*
  - *At the moment the Ack/No\_Ack bit has two possibilities:*
    - *Ack and error indication*
    - *or no ack and no error indication*
  - *Third possibility is to not provide acknowledgements but to provide an error indication.*
- *Recommendation is not to do this*
- *If an application wants to get an error message it should ask for an ack/reply*

# Items for consideration (4)

- *32-bit CRC for data*
- *CRC vs checksum for header*
  
- *CRC gives better error coverage*
- *Is easy to compute in hardware*
- *Not so easy to implement in software*
  
- *Recommendation is to use 32-bit CRC*
  - *Too difficult to compute*
- *Optional 8-bit CRC or no CRC*
  - *Must always be there (or not)*
- *Longitudinal parity check*
  - *Easier than CRC to generate*
- *8-bit CRC always*
  - *Simple in SW with look up table*
  - *Expensive in hardware when done in parallel*
  - *Cannot do serially because of NULLs parity bits etc*
- *8-bit CRC or Checksum acceptable for small packets*
- *Need to look at parallel CRC algorithms*
- *If long (16 or 32 bit) CRC is possible to do in hardware efficiently then we will use that.*
  - *Has to be easy in software too*
- *Otherwise use 8-bit CRC unless too difficult in which case will use 8-bit LPC.*
- *Baseline is 8-bit LPC unless CRC is easy*

## *Items for consideration (5)*

- *Small read/write command*
- *i.e. restricting validated write to four bytes data*
- *And payload of small read to four bytes*
- *This removes need for data length*
- *Saves some bytes*
- *But upsets command alignment*
  
- *NOT recommended*

## *Items for consideration (6)*

- Writing to a FIFO which is full?
- It was decided that to support this and to be able to indicate back to the source application the actual amount of data that has been transferred, a data length field is needed in the reply.
- The data length field in a reply indicates the actual amount of data that was read or written.