ODR Status

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Hardware/Firmware

- ODR is working(!)
  - Receive data on 4x fibre (RX),
  - Write to disk FAST (250MB)
  - Send data up fibre (TX)
  - Controlled from Linux driver

- Future upgrade: Decode event header from LDA
  - Provides on-line info
  - Can deal with control messages from LDA
  - Allows host to write to disk without processing

Software Status

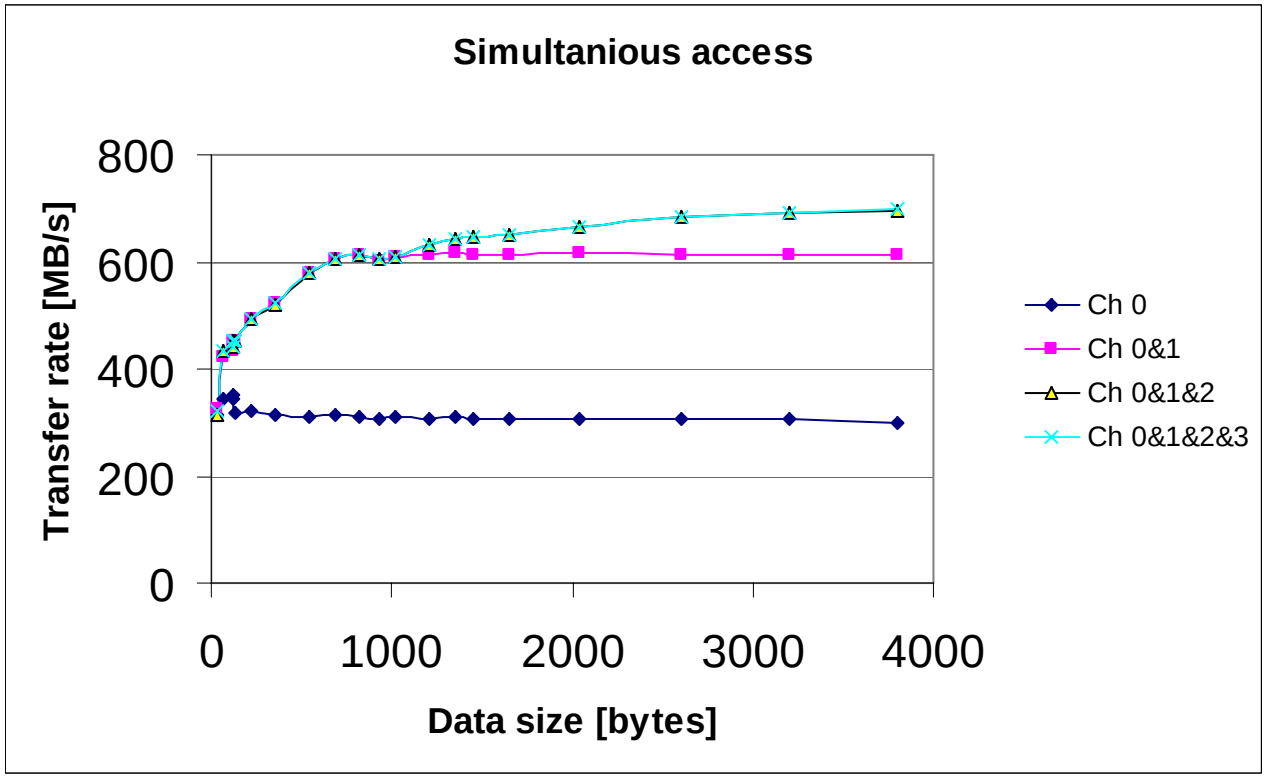
ODR receiver: program running on a host machine. Communicate with ODR cards,retrieves the data, sets up ODR card parameters.

Progress in the following areas:

- Data transferred from ODR memory -> host memory->to disk (rate 250 MB/s for event fragment 2 kB
- Tested sending messages (Tx message to LDA)
- Interface to DOOCS and processing messages:
  DOOCS->ODR receiver ->ODR, ODR receiver-> DOOCS:

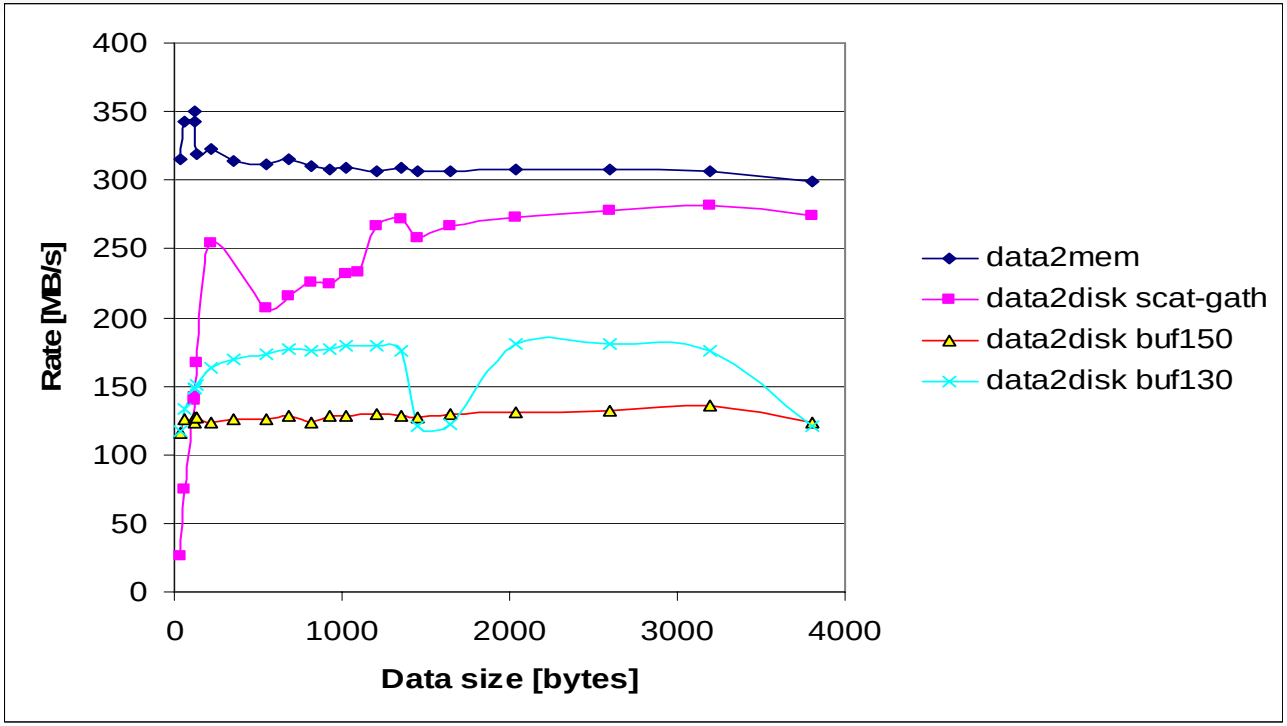
a) Setting up parameters: ODR Receiver and ODR card
b) Passing ODR statistics back to DOOCS
c) Passing commands to ODR receiver (start, stop,pause, etc)

Performance (data to memory)



Improvements in performance when accessing more then one channel.
The maximum performance achieved for 3-channels access. Adding additional Channel (4-channel access) does not yield improvement in transfer rate.

Performance

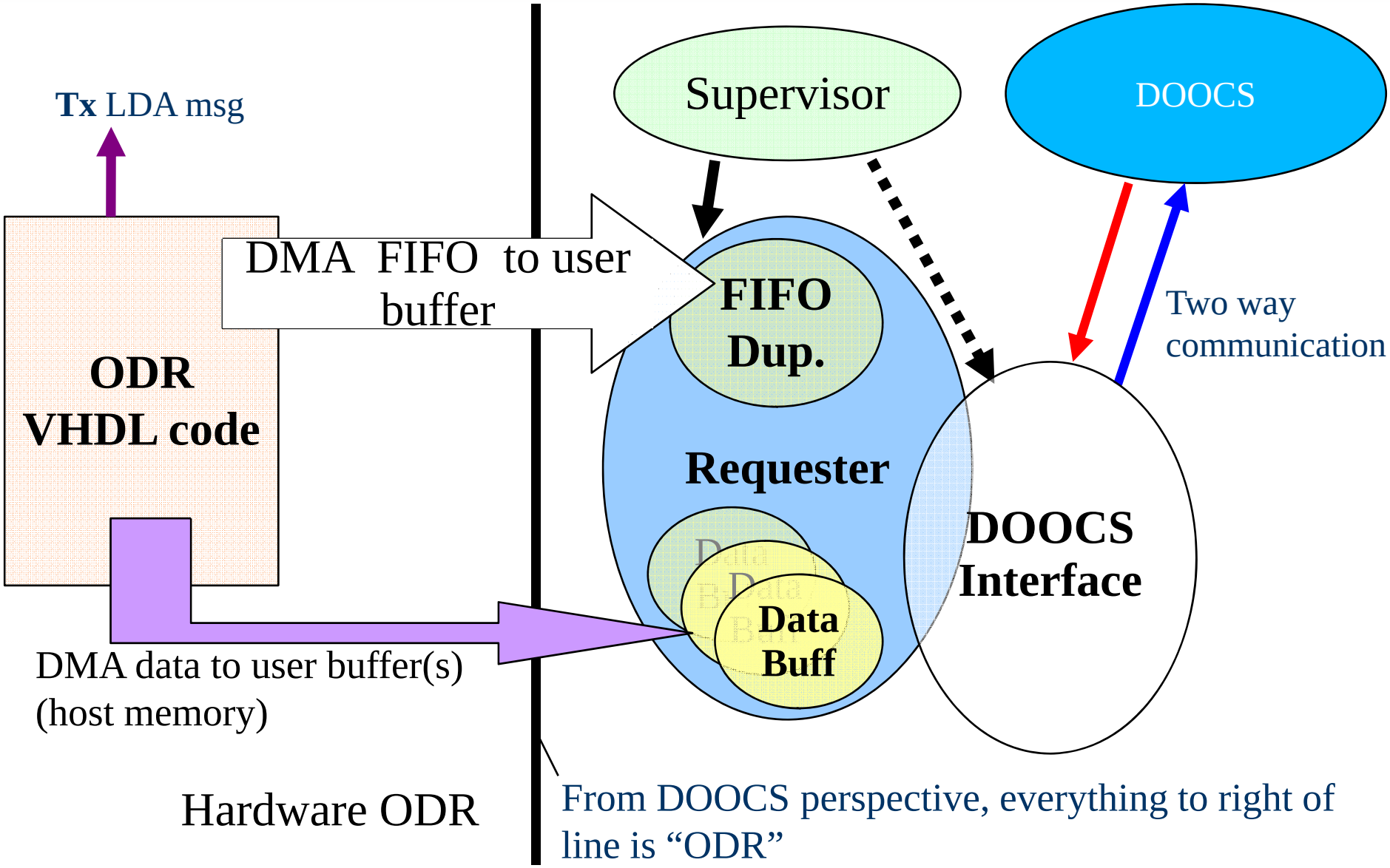


Top:Data to memory
All other: data to disk:
a) best performance- scatter gather- data copied to up to 80 buffers, then written to disk.

Two lower curves: data to a single memory buffer, then copied to disk.

Single channel.
Data written to RAID array. Maximum bandwidth for the array: 300 MB/s.
Adding active channel has no effect on the rate (remain constant).
Best performance for scatter-gather scenario.

Interface to DOOCs



Future Development

- Improve DOOCS GUI.
- Add (DOOCS) plots of basic ODR statistics (on-line).
- Create event fragment data base (inside DOOCS ?)
- Test connectivity to LDA with the “real” LDA hardware