

Alternative Proposal

-Efficient bi-directional
communication over single login -

Simple High Performance
Transport (SHPT)

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Requirement and Ordered Model

The Requirement says ..

- Each endpoint can send data

(On the other hand.....)

Ordered Model is characterized as ..

- Initiator schedules whole data transfer
- Target executes and completes each requests in-order

Some mechanism is necessary to fill up the gap between them. BUT,

To fill up the gap...Problems

Scheme 1 *Initiator appends only ORBs those Target GUARANTEEs to complete.*

Scheme 2 *Initiator RE-SCHEDULEs the tasks in the task list by complying with Target.*

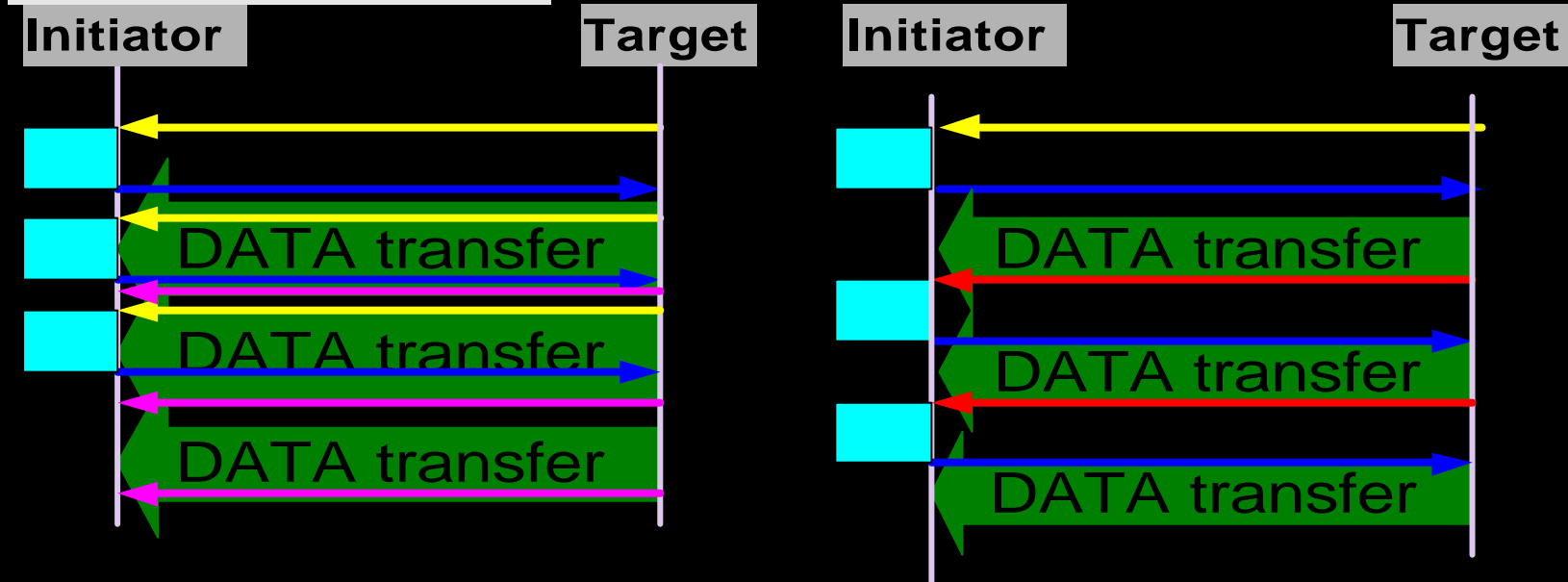
Problems

- *Redundant Bus traffic (scheme1, scheme2)*
- *Inefficient use of bus bandwidth (scheme1)*
- *Extra work load on both Initiator and Target to re-schedule tasks (scheme2)*

Scheme 1
 Initiator appends only ORBs those Target guarantees to complete
Back channel case

1 redundant traffic

2 Inefficient use of bus bandwidth



- Initiator makes and appends ORB .
- unsolicited status DATA indication
- Complete status
- Write to ORB pointer
- Complete status & DATA indication

Why we propose

Those problems prevent ORDERED MODEL from meeting the requirement “efficient data transmission”.

Originated from trying to fill up the gap between the requirement and ORDERED MODEL?

A simple way to avoid the gap itself,

->Examine

“UNORDERED (QUEUING)MODEL”

over single login at first

Simple High Performance

Transport (SHPT)

SHPT is...

- *A command set on top of SBP-2*

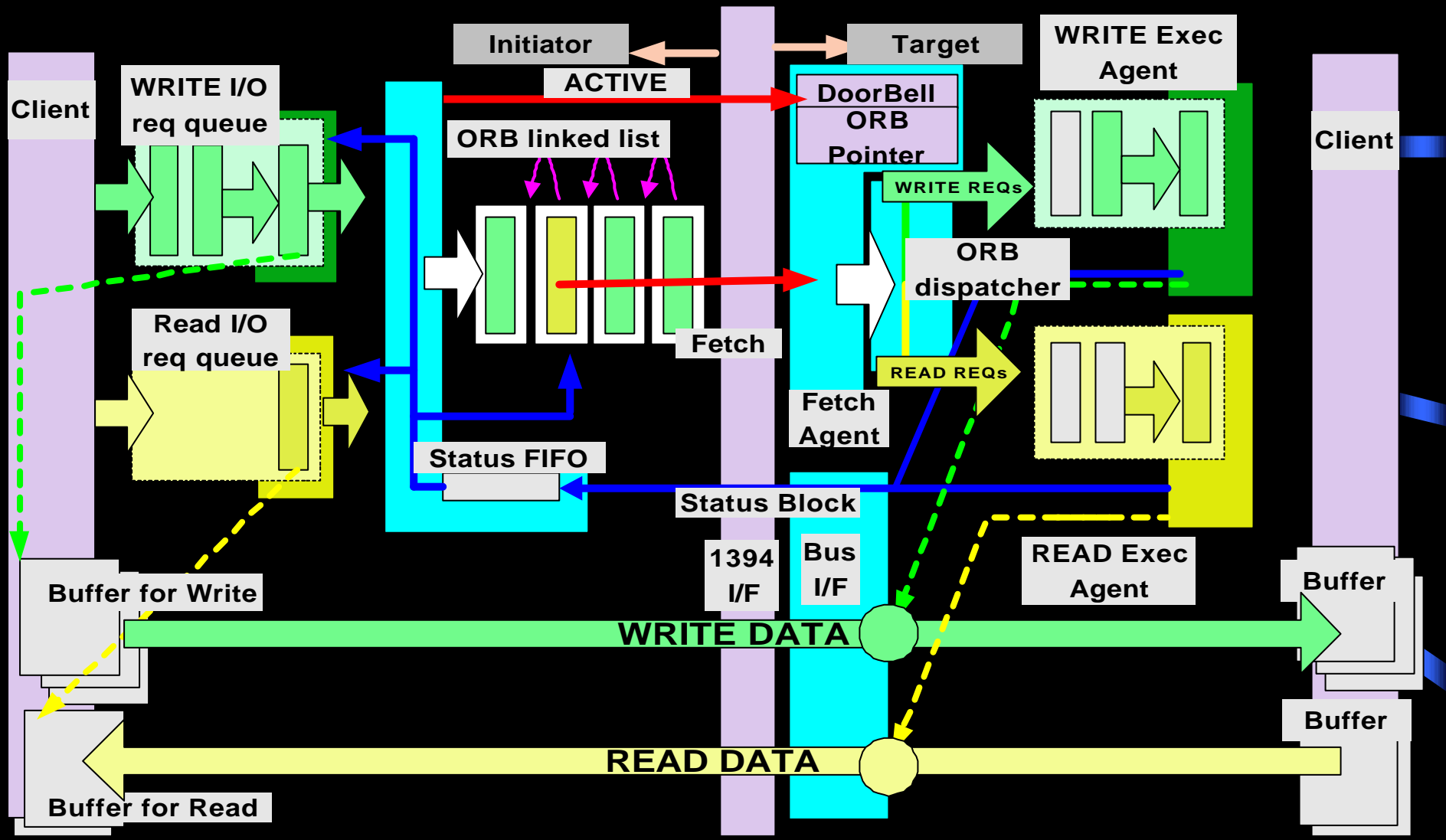
SHPT includes...

- *Command-set dependent task management model (QUEUING model)*

SHPT enables..

- *Full duplex communication efficient for Both Directions.*

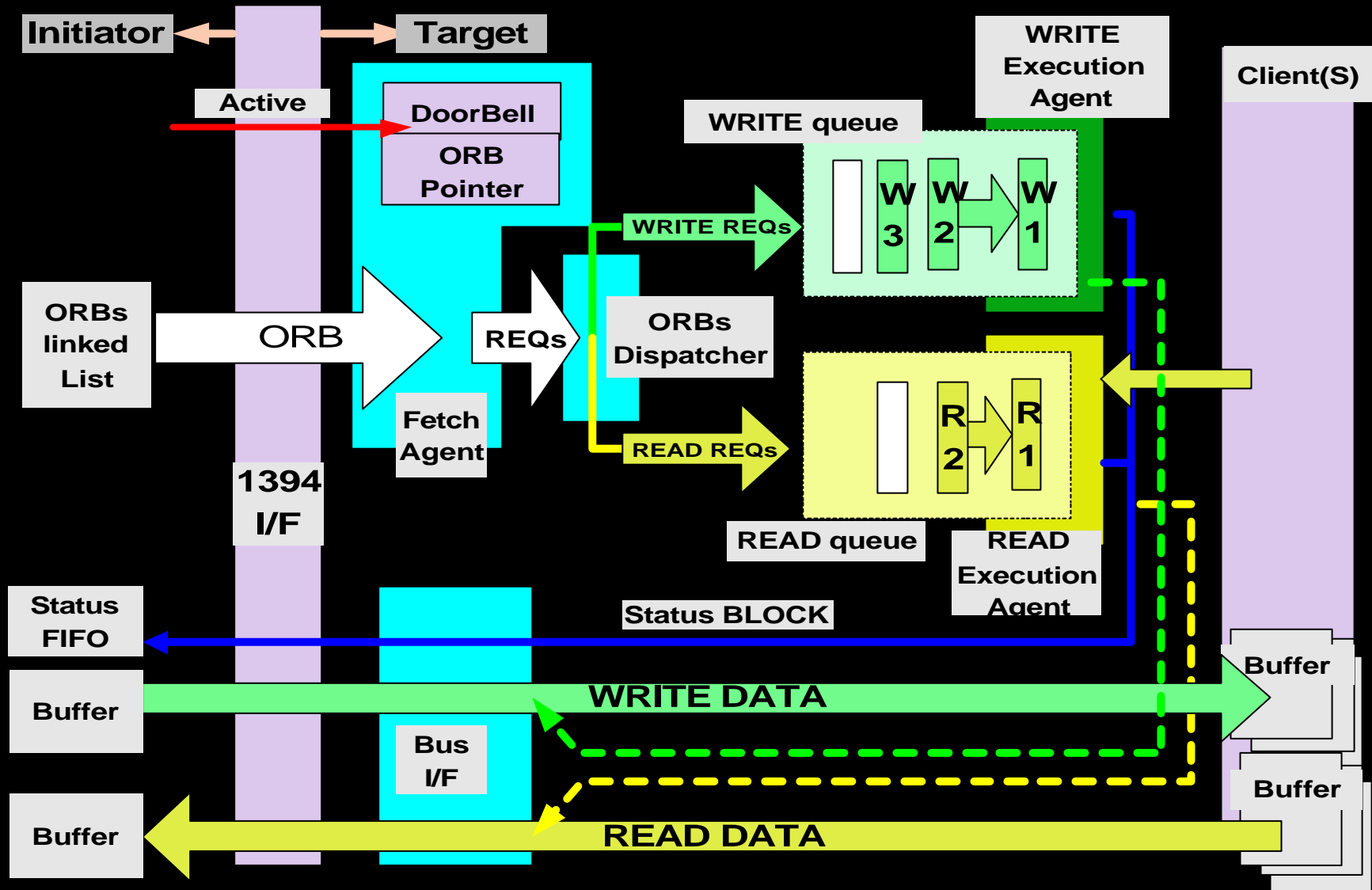
Whole Model



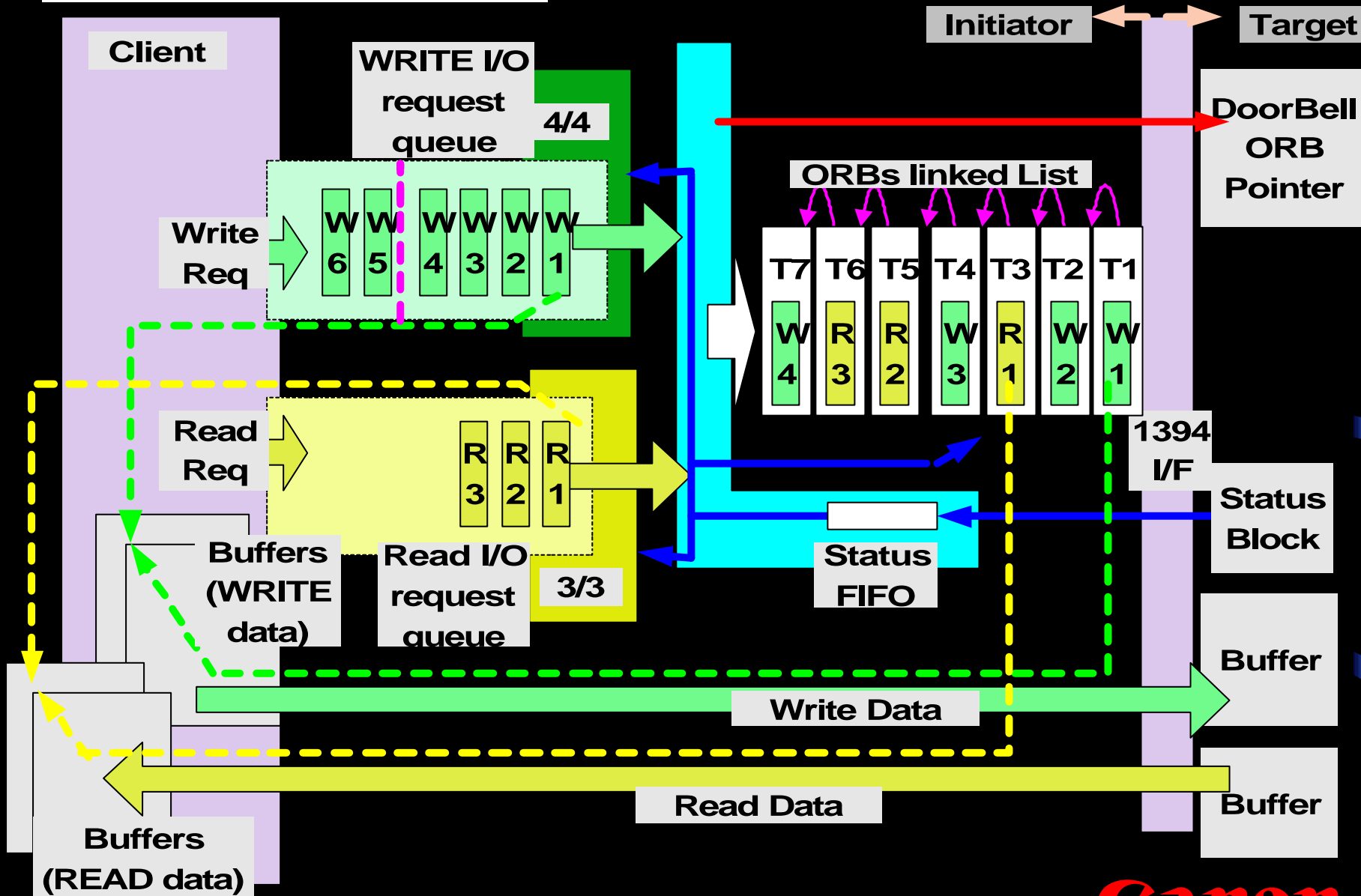
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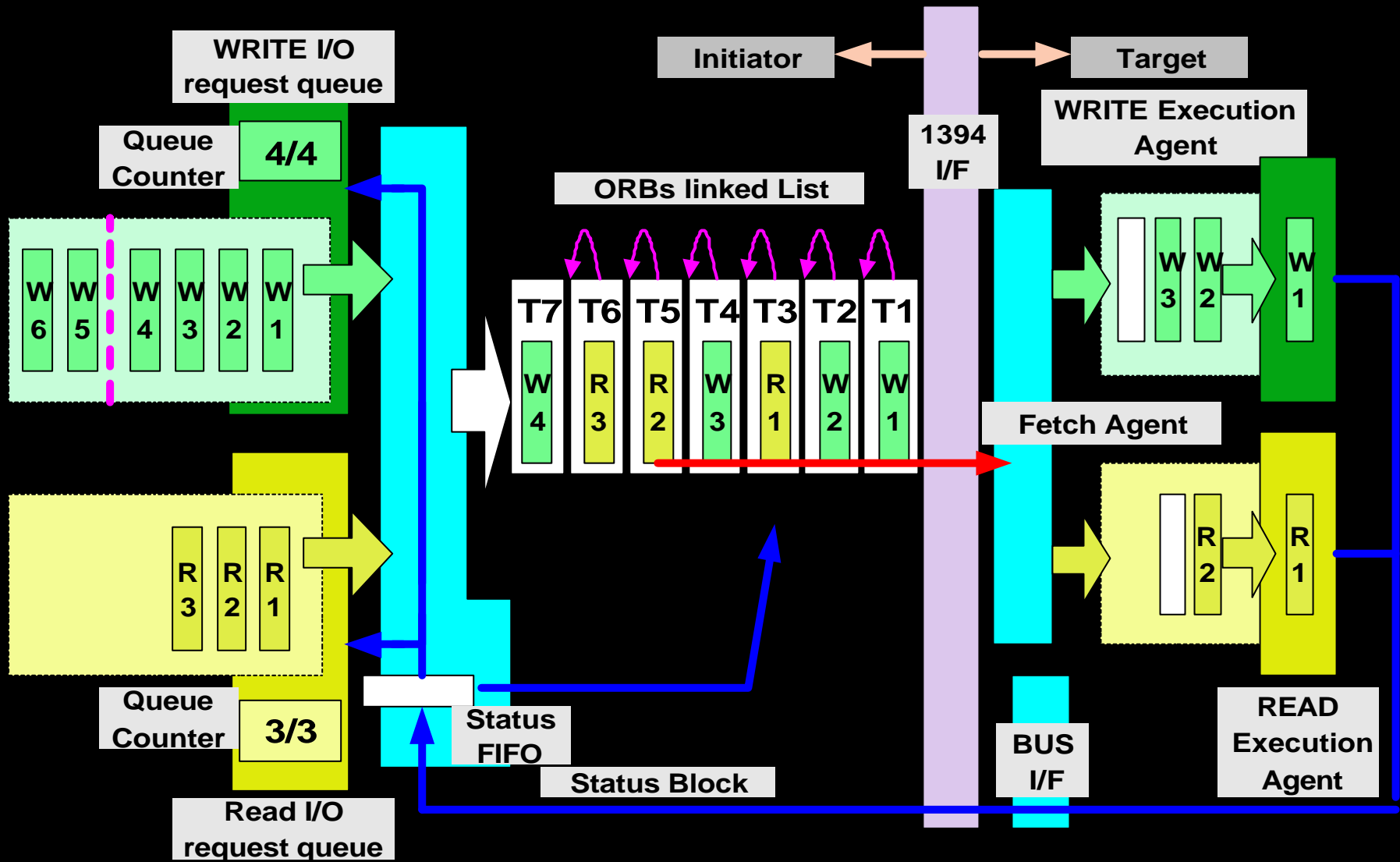
Target Model



Initiator Model



ORBs Management



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Error Recovery

For Error recovery.....

Initiator shall keep...

- the contents of data buffers associated with ORBs in the linked list
- the correspondence of Data buffers to “Sequence Identifier”

Target shall guarantee...

Not execute any data and command twice.

Conclusion and Issue

Conclusion

Let Target re-order !

Issue

“*Unordered(Queuing)* model
over SINGLE login”

or

“*Ordered* model
over DUAL login”?

Thank you for your interest

Detail Document :

file: *SHPT04d.PDF*

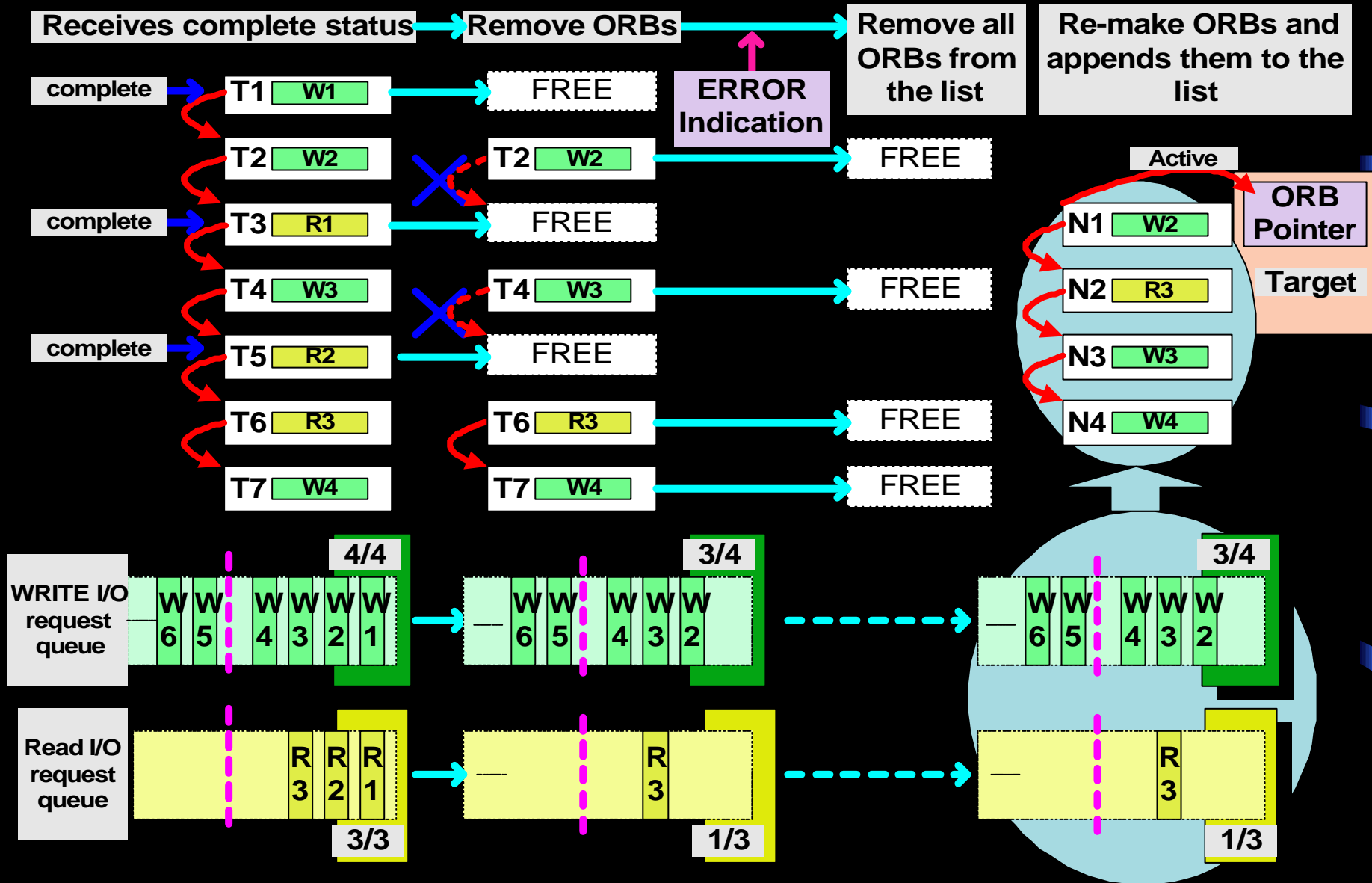
you can get it from

<http://www.pwg.org/p1394/>

If you have any questions or suggestions to this material,

Contact to: *oid3-1394@pure.cpdc.canon.co.jp*

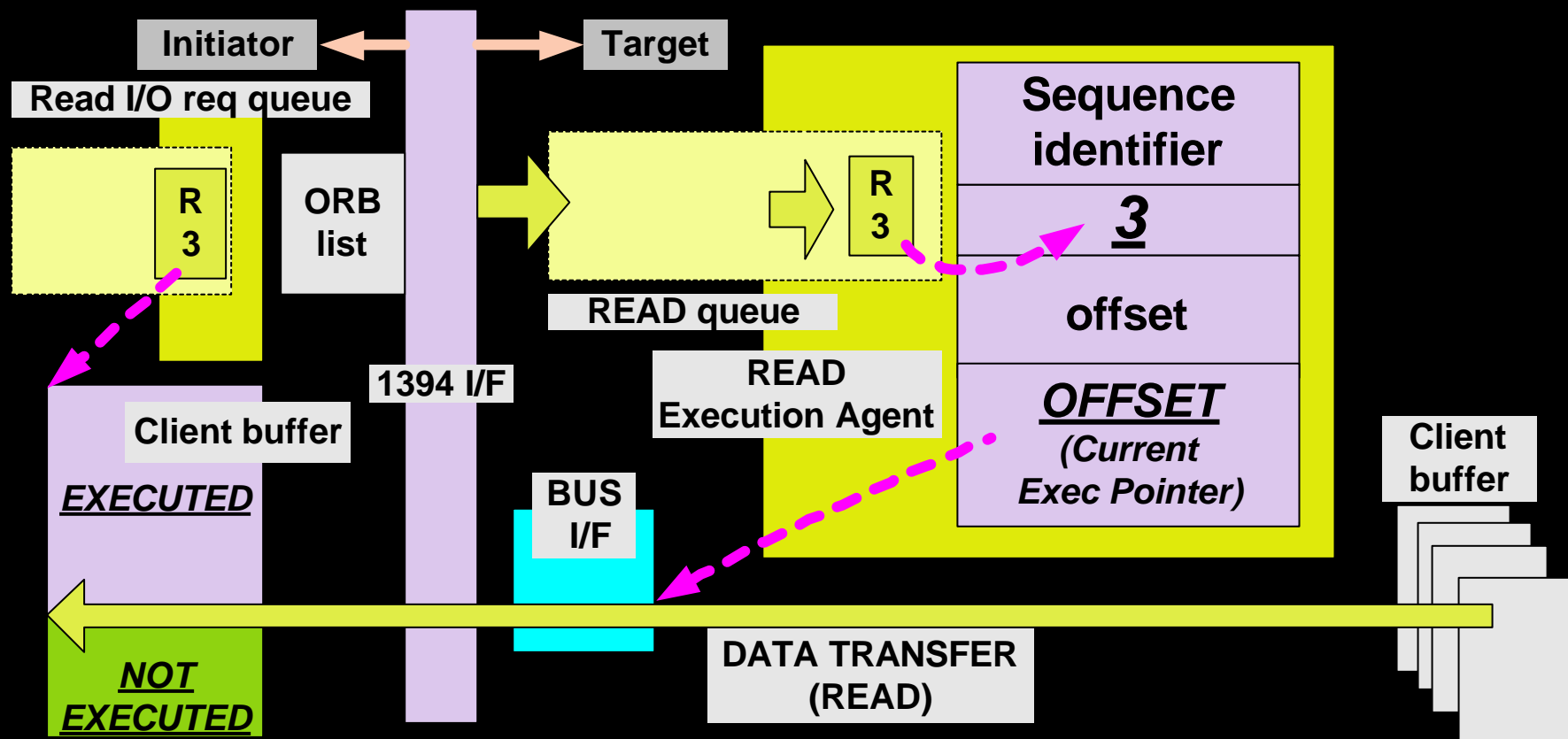
Error Recovery (Initiator)(2)



Error Recovery (Target)

Resume from the pointer specified by

- Offset(Current Exec pointer)
- Sequence identifier



Append and remove ORB

- Target does NOT re-refer next ORB field

