The Level-2 Supervisor for the Demo-C

**Distributed Supervision** (Architecture C)

![Diagram of Distributed Supervision](image)

- LVL1_ROB
- Data_ROB
- Event_Proc
- SWITCH

**Key Events and Processes**:
- LVL1 data sending
- Data request
- Data delivery
- Decision broadcast (T2DR)
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Distributed Supervisor (Architecture C)

- LVL1_ROB
- LVL1_ROB
- Data_ROB
- Data_ROB
- Data_ROB

- Data_PROC
- RoI_PROC
- Data_PROC
- Data_PROC
- Data_PROC

LVL1 data sending
Processor allocation (RoIRSF)
Data request
Data delivery
Processor status (COutR)
Decision broadcast (T2DR)
- Homogenous structure
- LVL1 data in ROBs - flexibility in Rol processing
- Merging LVL1 events to avoid 100kHz transfer from ROB
- Scalable, no “hot spot” or bottlenecks
- Changeability Rol_Proc <=> Processor (software)

- Added traffic to the SWITCH
- Added latency
STEWARD processor: a bottleneck? (2)
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STEWARD processor: a bottleneck? (1)

Distributed STEWARD processors:

Maintain list of Proc
Receive Proc decision
Broadcast decision to ROBs

Distributed Proc list
(allocated for STEWARD-RoI_Proc?)

Distributed Steward functions:
(each RoI_Proc performs STEWARD functions)
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LVL1 Data input to the Supervisor (2)

MU → ROD
EM → ROD
J → ROD
TAU → ROD
ME → ROD
CTP → ROD
FE → ROD
FE → ROD

ROB → SLinks
ROB → SLinks
ROB → SLinks
ROB → SLinks
ROB → SLinks
ROB → SLinks
ROB → SLinks
ROB → SLinks

SWITCH

Steward → Rol_Proc → Rol_Proc → Rol_Proc

SWITCH

Processor Processor Processor Processor Processor Processor Processor
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LVL1 Data input to the Supervisor

- Moun, Calo and CTP prepare LVL1 data
- Rol Builder merge LVL1 data in one message
- LVL1 data are sent via SLink (by ROD?)
  SLink - “hot spot”
- Input Router dispatch the LVL1 data (Ev#1, Ev#2, ...)
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Demonstrator for the architecture “C”
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Level-2 trigger system (Architecture C)

Level-2 Supervisor: Conceptual design (Demo-C subset)

GUIDELINES:
- Commercial Hardware (RIO2, PCI)
- Event Parallel Operations - Rol_Proc
- “Hot spots”:
  - Single input (SLink)
  - Input Router
  - Steward
- Possible bottlenecks:
  - Steward
  - Steward - Rol_Proc path (VMEbus)