

ATCA Summit 2011

AdvancedTCA Extensions

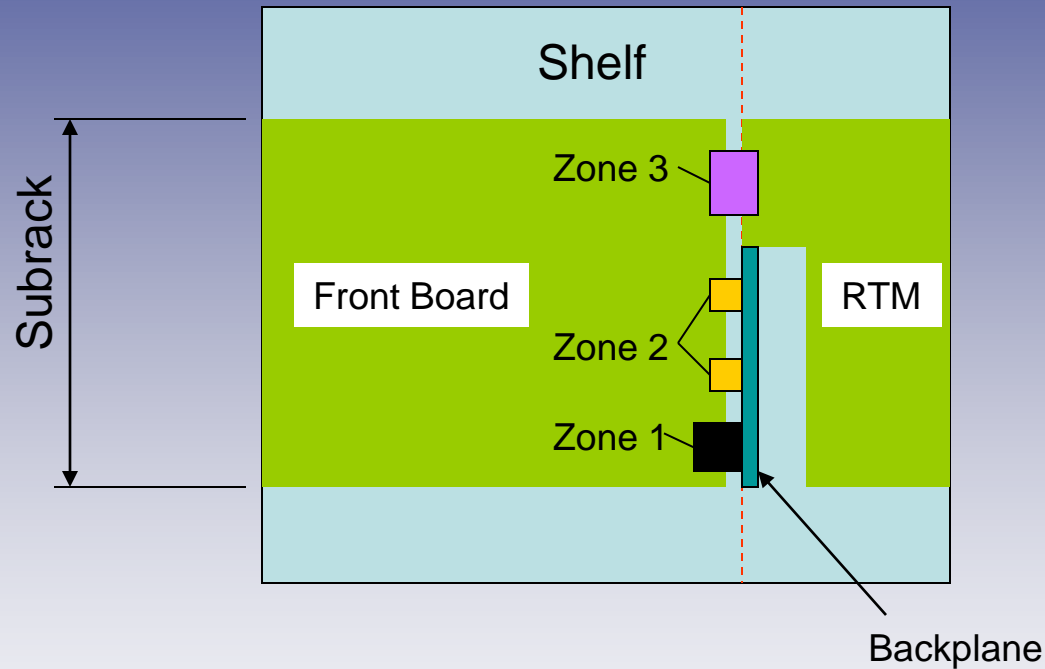
PICMG 3.7 Mechanical

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PICMG 3.7 Specification

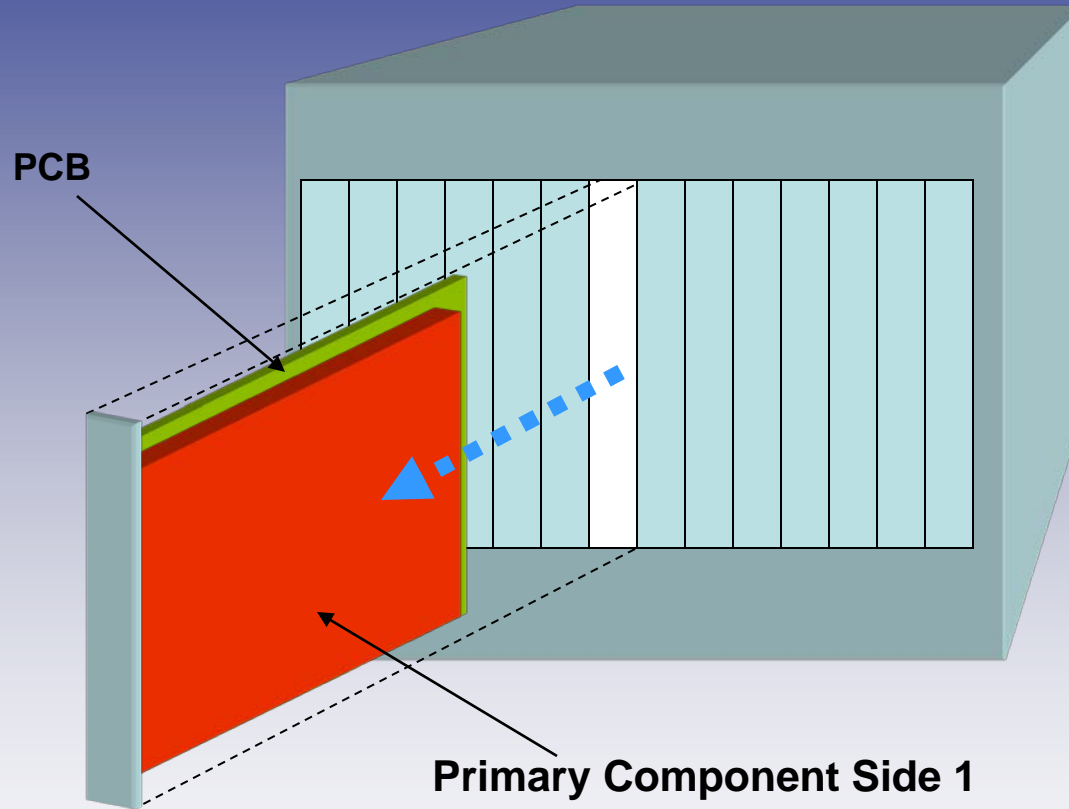
The PICMG[®] 3.7 specification extends the definition of AdvancedTCA Boards & Shelves and addresses the need for both more dense functionality and ever increasing computational capabilities.

PICMG 3.0 Classic ATCA Shelf - Sectional Side View: Permitting a 14 slot system



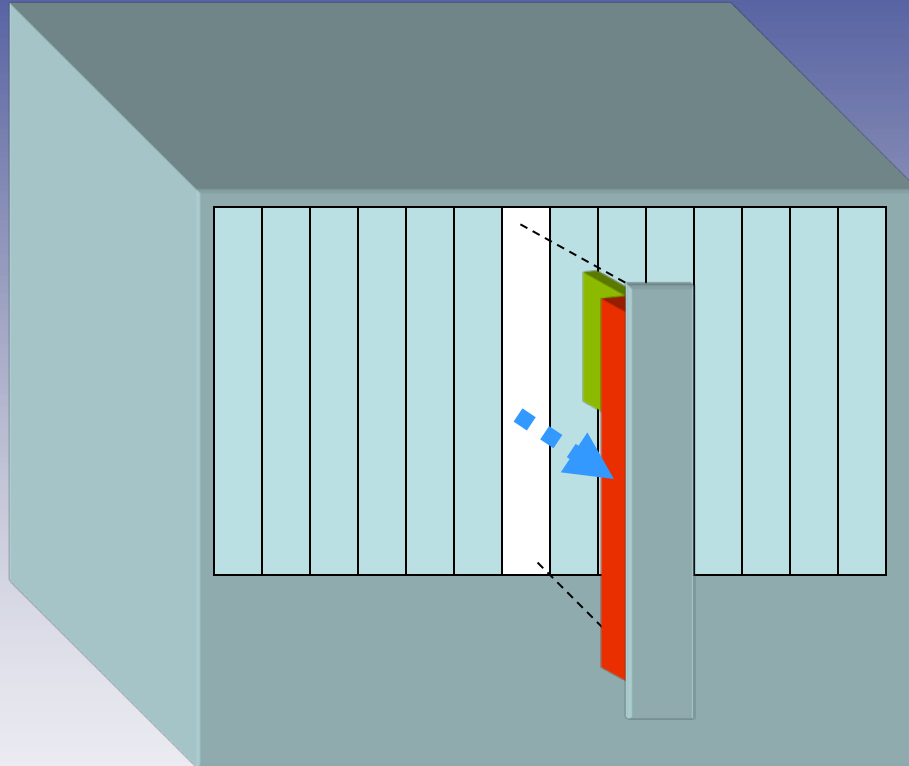
A Shelf consists of a Subrack, a Backplane, Boards, cooling devices, power supplies, etc.

The ATCA Classic Front Board (1 slot = 6 HP) – PCB left aligned



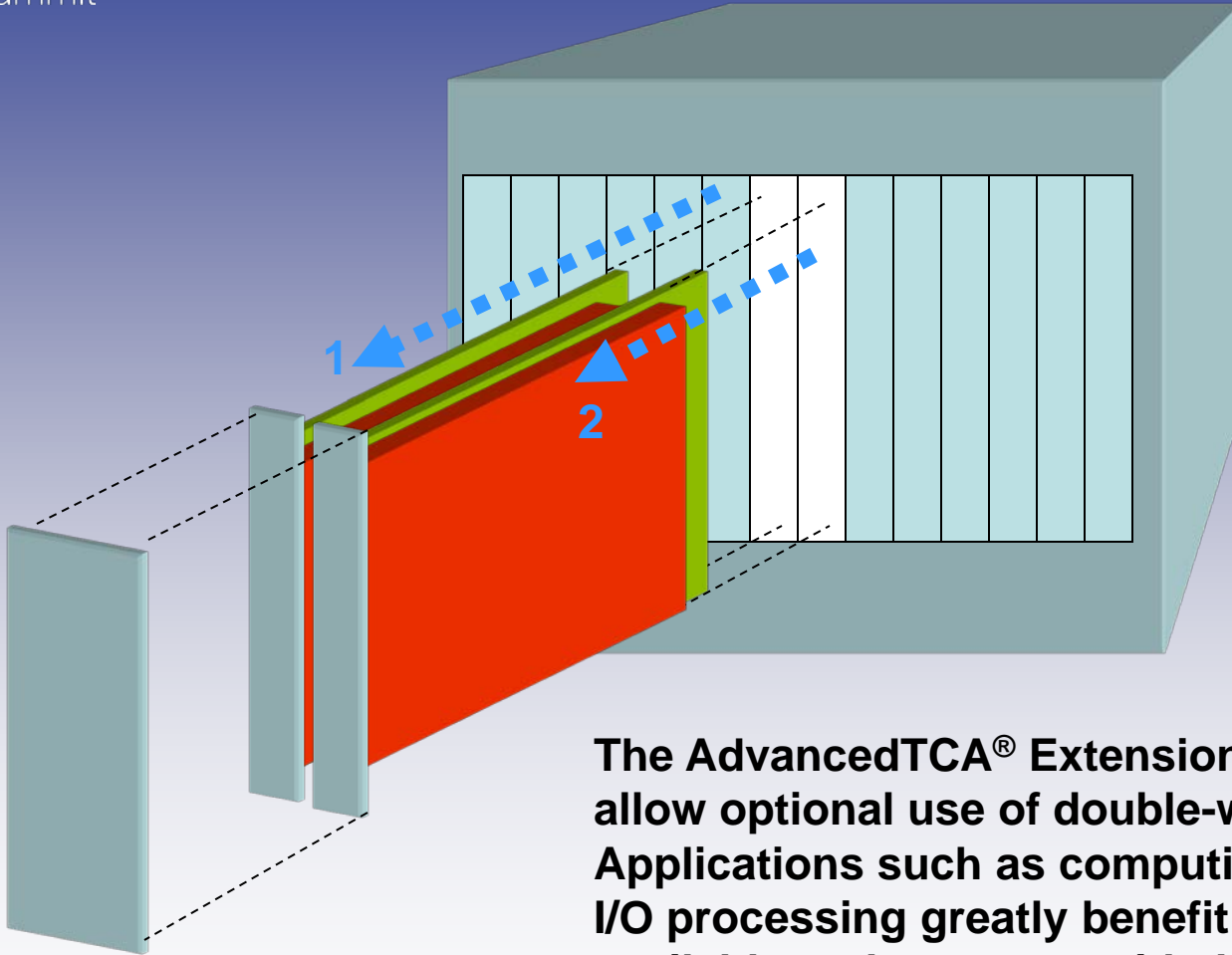
A board that conforms to AdvancedTCA[®] mechanicals (8U x 280 mm), including a PCB and a face plate. A board connects with the Zone 1 and Zone 2 connectors to the backplane and, optionally, with a Zone 3 connector to an RTM.

The Classic ATCA RTM (6 HP = 1 slot) – PCB right aligned



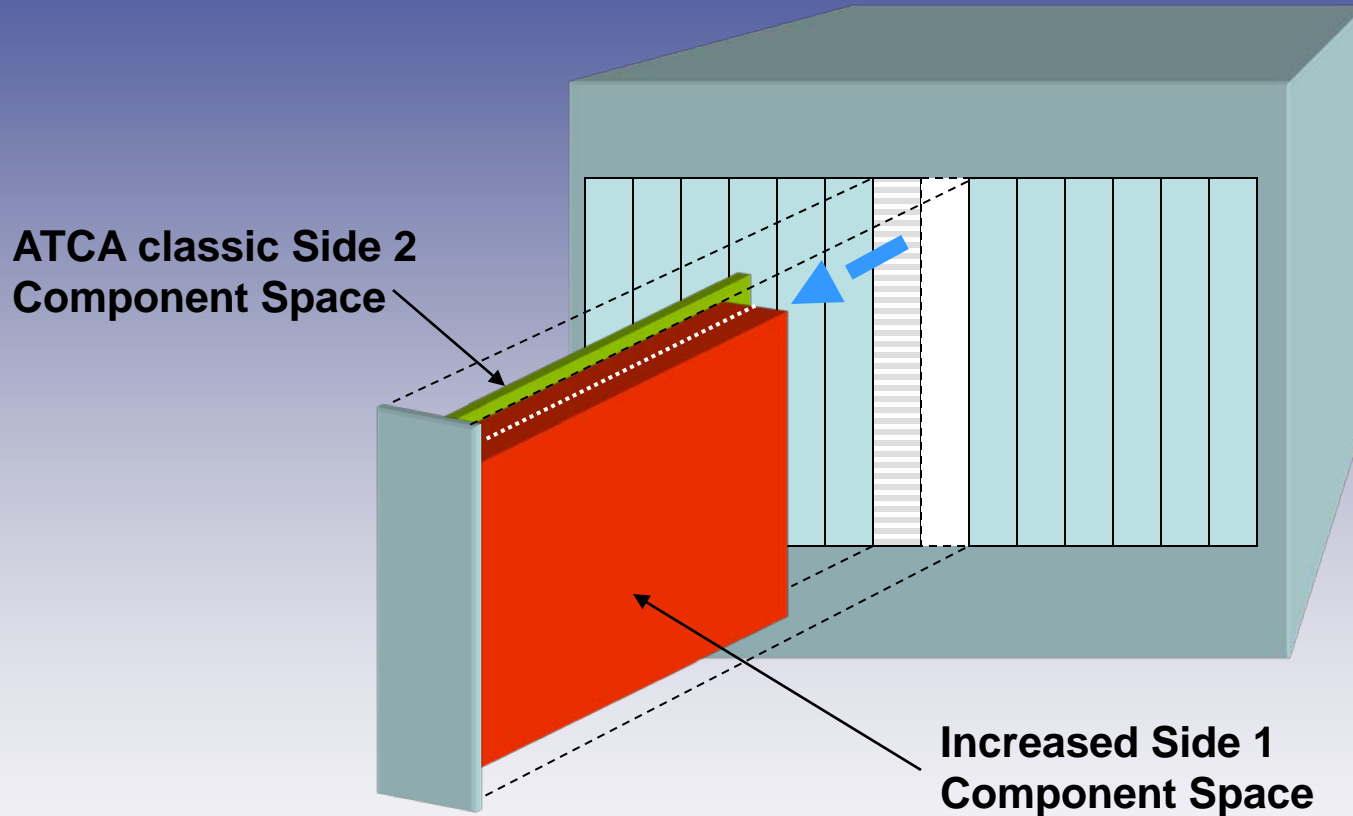
An 8U x 70 mm x 6 HP assembly installed into the rear portion of a Shelf and mated with a Front Board through Zone 3 Connectors to provide I/O connectivity

ATCA Classic Front Boards (2 x 6 HP = 12 HP)



The AdvancedTCA[®] Extensions explicitly allow optional use of double-width boards. Applications such as computing, storage and I/O processing greatly benefit from additional available real-estate provided by the new board types.

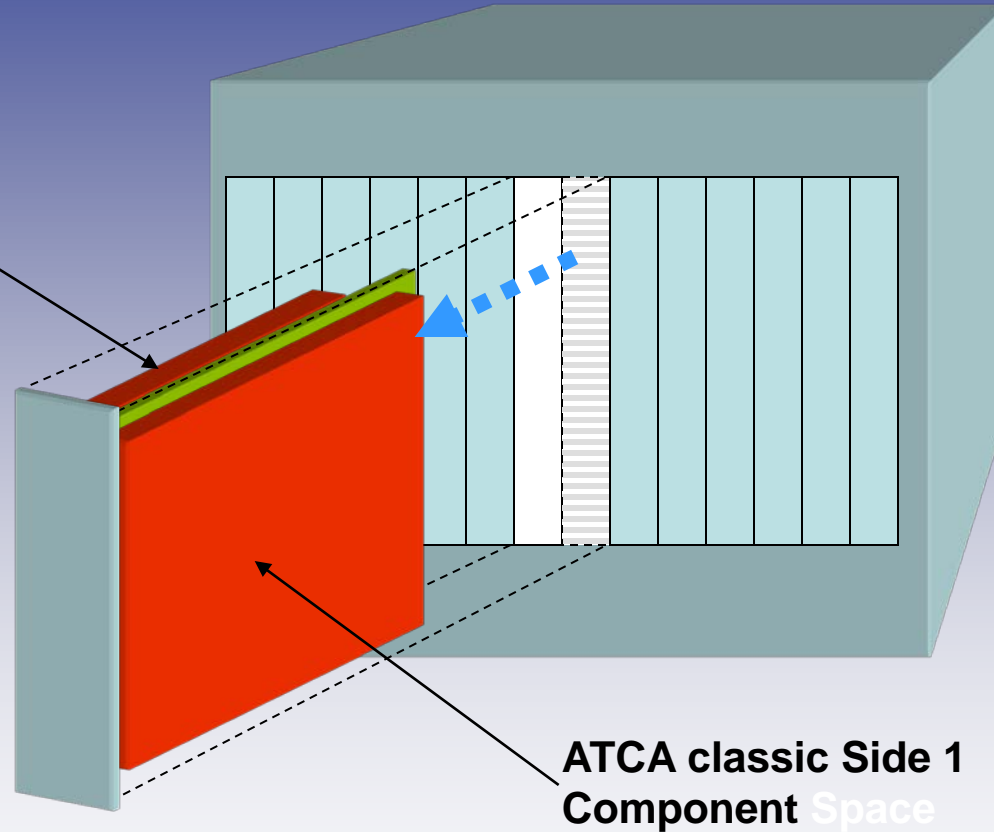
The ATCA Extension Double Wide Front Board (1 x 12 HP) – PCB left aligned



A double wide, left aligned board occupies a 12 HP (60.96 mm) slot. The primary PCB utilizes the farthest left guide rails available in the subrack.

The ATCA Extension Double Wide Front Board (1 x 12 HP) – PCB center aligned

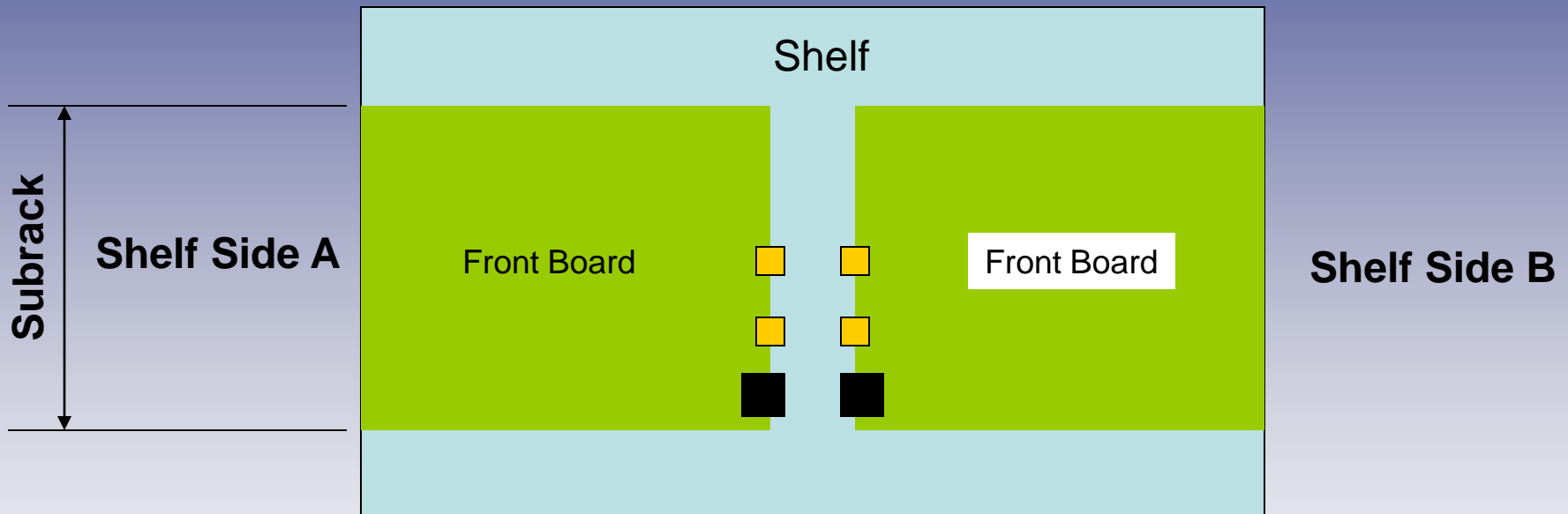
Increased Side 2
Component Space



ATCA classic Side 1
Component Space

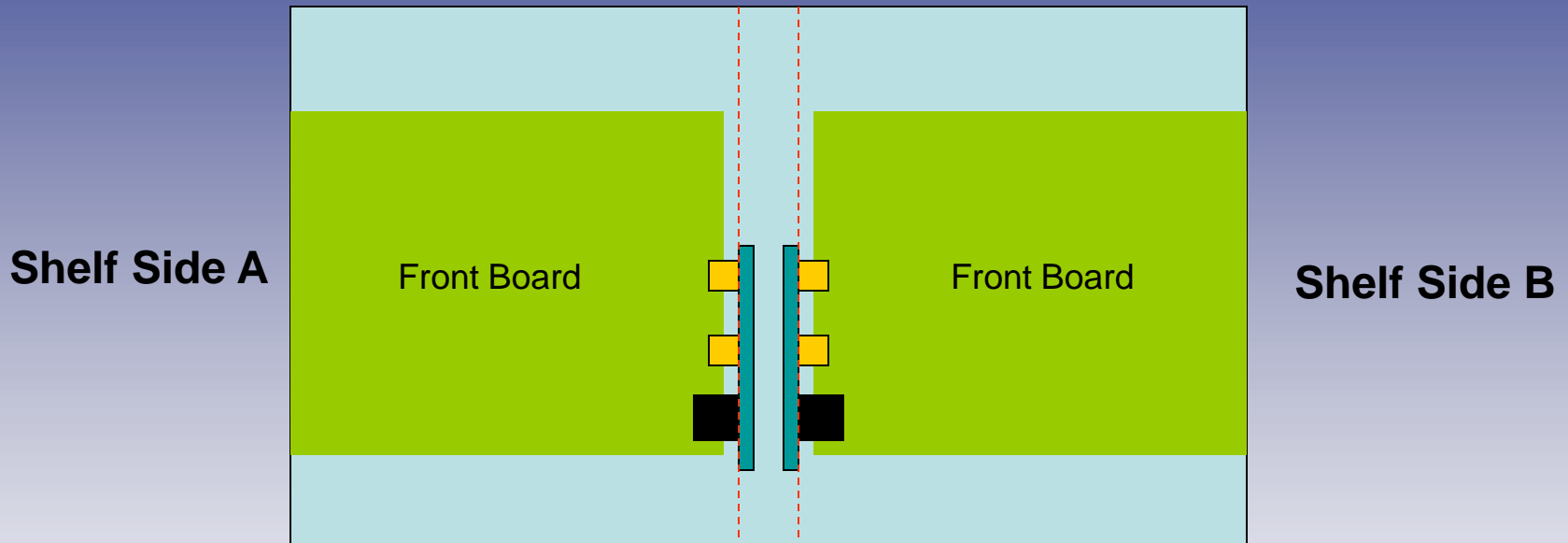
A Double Wide Centered Board that is plugged to the power connector in the right single wide Slot.

ATCA Extension permitting a 28-slot Front Board System Single slot - Sectional Side View



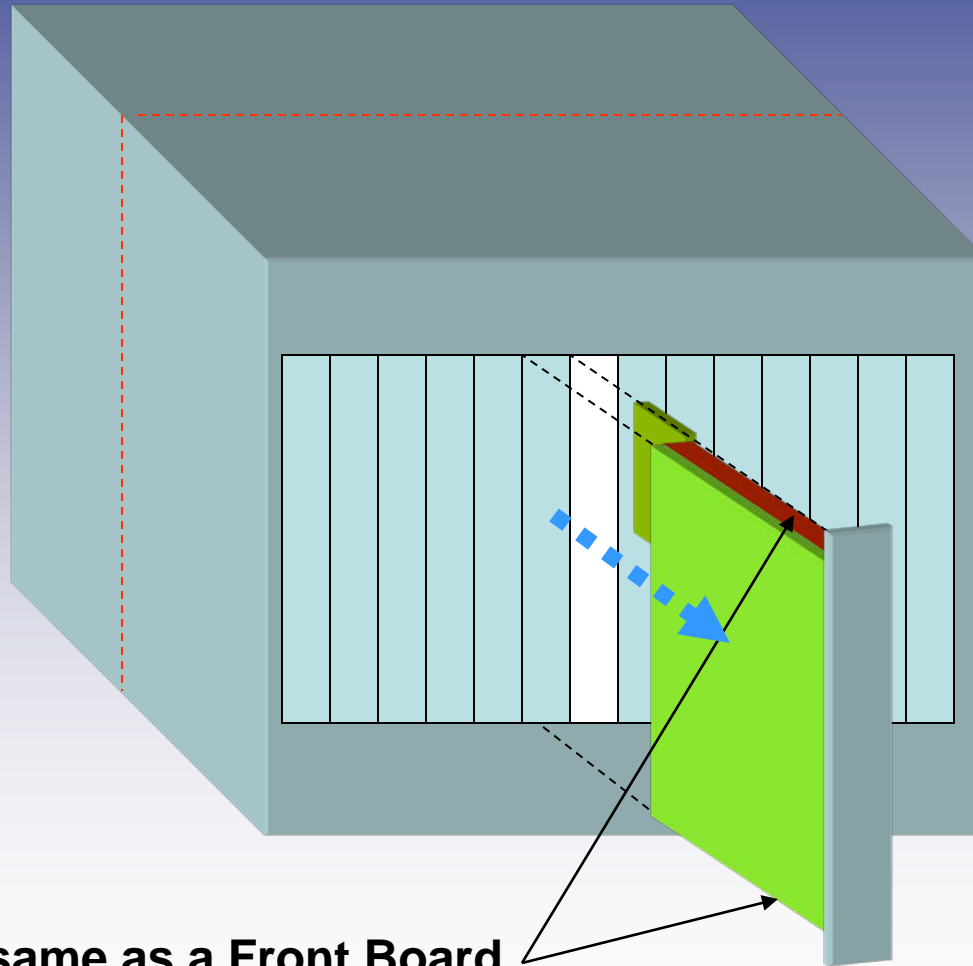
A Double Sided Shelf supports installing Front Boards into **Side A and **Side B**.**

ATCA Extension permitting a 28-slot Front Board System - Single slot



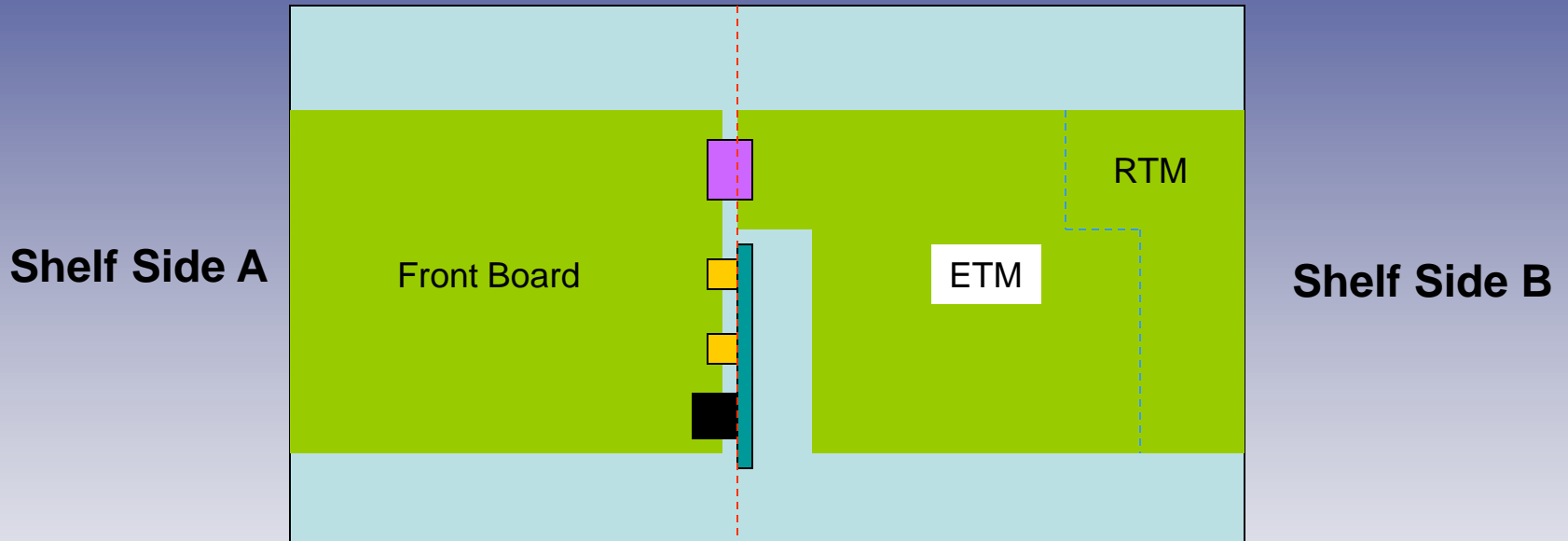
The Dual Backplane Shelf supports two Backplanes, one Backplane included in the Subrack on Side A and one Backplane included in the Subrack on Side B. The Backplanes on Side A and B typically have independent Base I/F and independent Fabric I/F switching planes.

The ATCA Extension – Extended Transition Modules



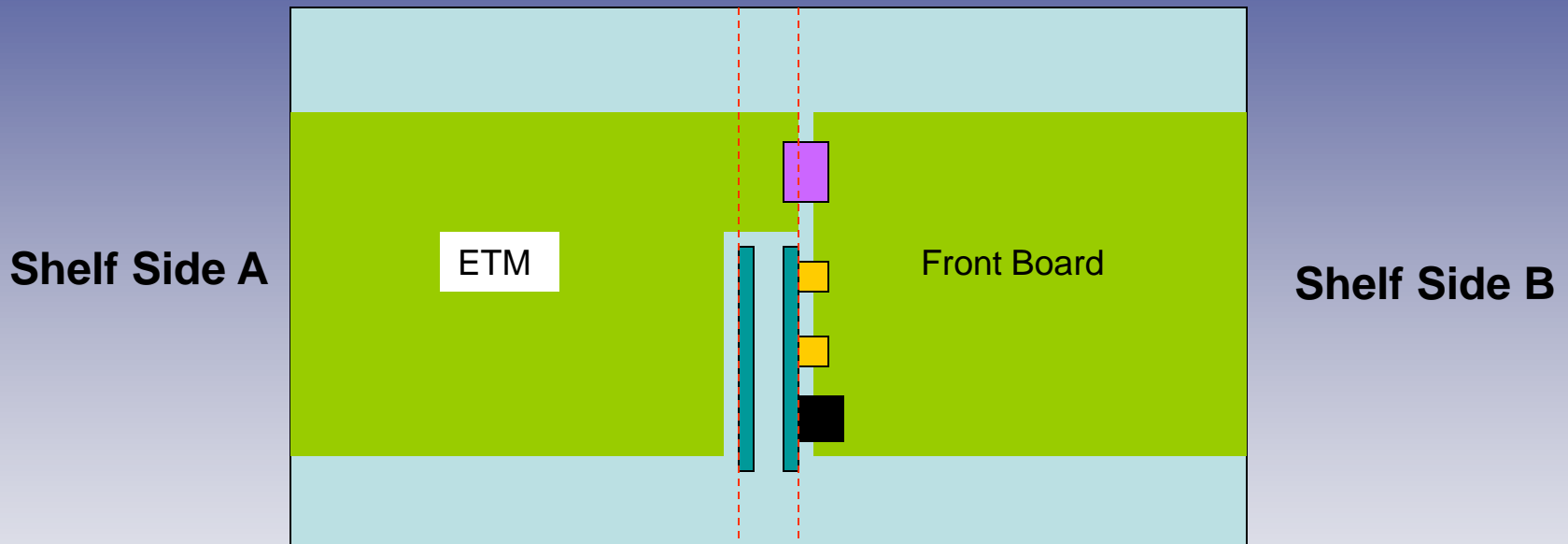
ETM guide same as a Front Board

ATCA Extensions for Extended Transition Modules (ETMs) - Side B Position



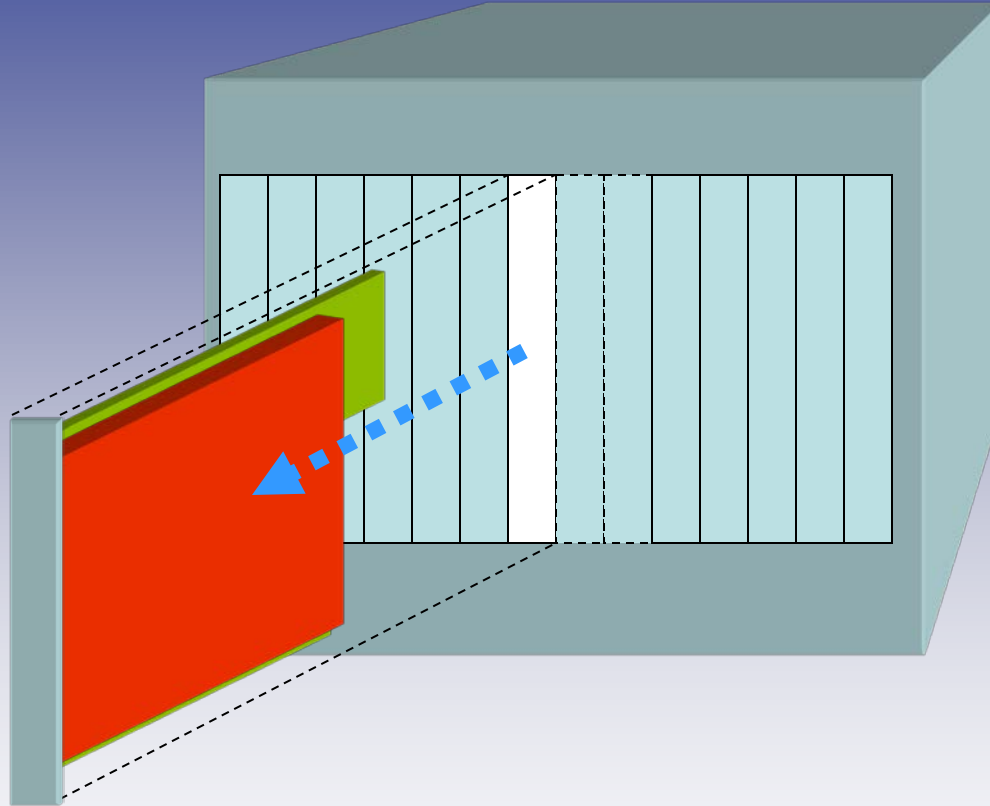
An Extended Transition Module (ETM) exclusively interconnects via **Zone 3** to an optional midplane or directly to a Front Board. An ETM can be installed into Side A or **Side B** of an AdvancedTCA[®] Extensions Shelf.

ATCA Extensions for Extended Transition Modules (ETMs) - Side A Positioned



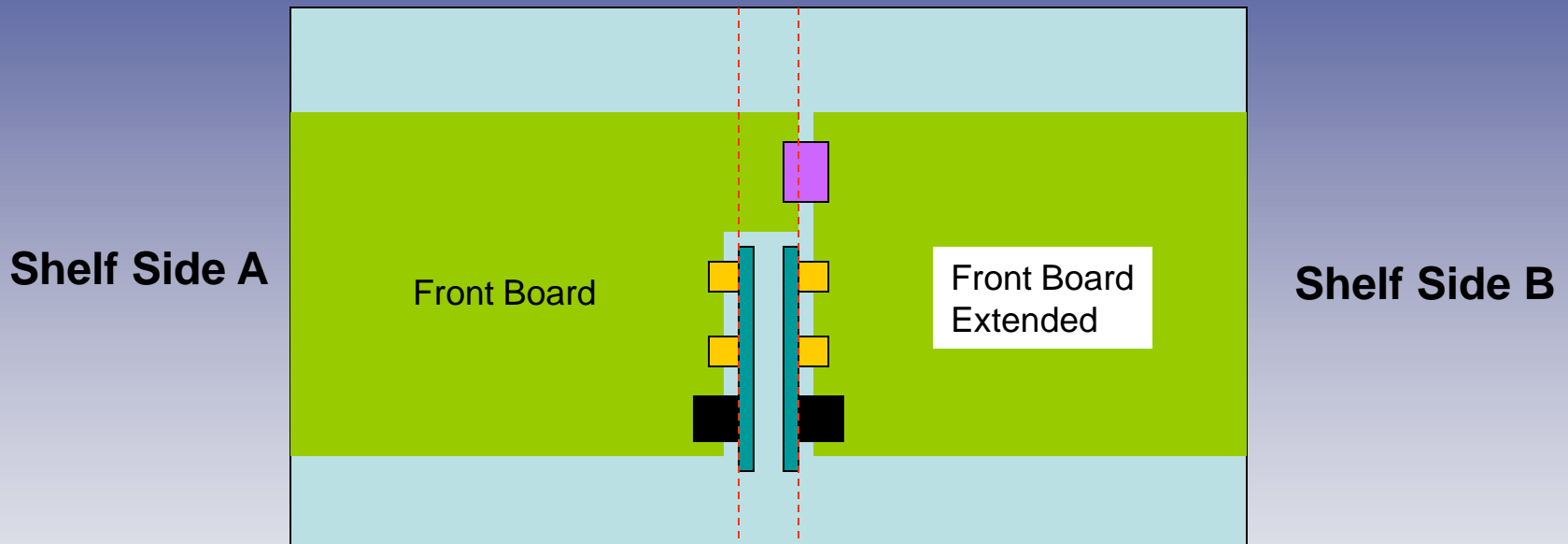
An Extended Transition Module exclusively interconnects via **Zone 3** to an optional midplane or directly to a Front Board. An Extended Transition Module can be installed into **Side A** or Side B of an AdvancedTCA[®] Extensions Shelf.

The ATCA Extension – Extended Front Board



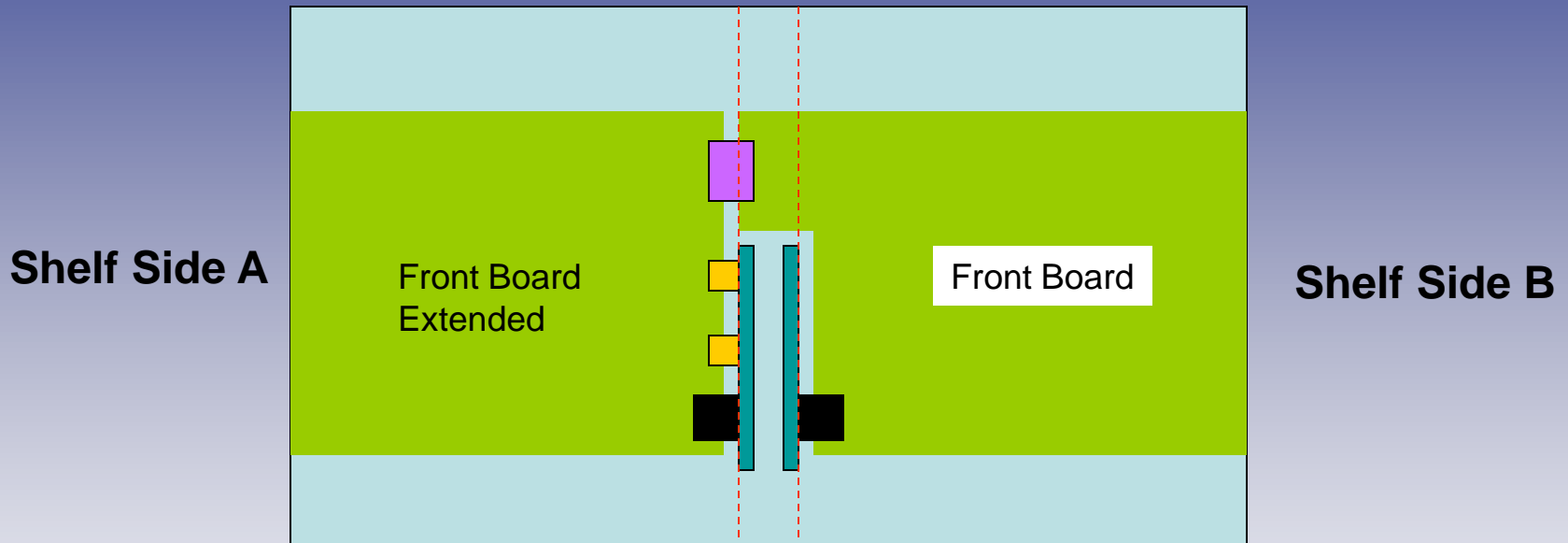
Extended boards provide connectivity to Zone 1 and Zone 3 or to all three Zones. They can operate independently or in conjunction with a front board.

ATCA Extension – Extended Front Board Zone 1, 2 & 3 interconnect



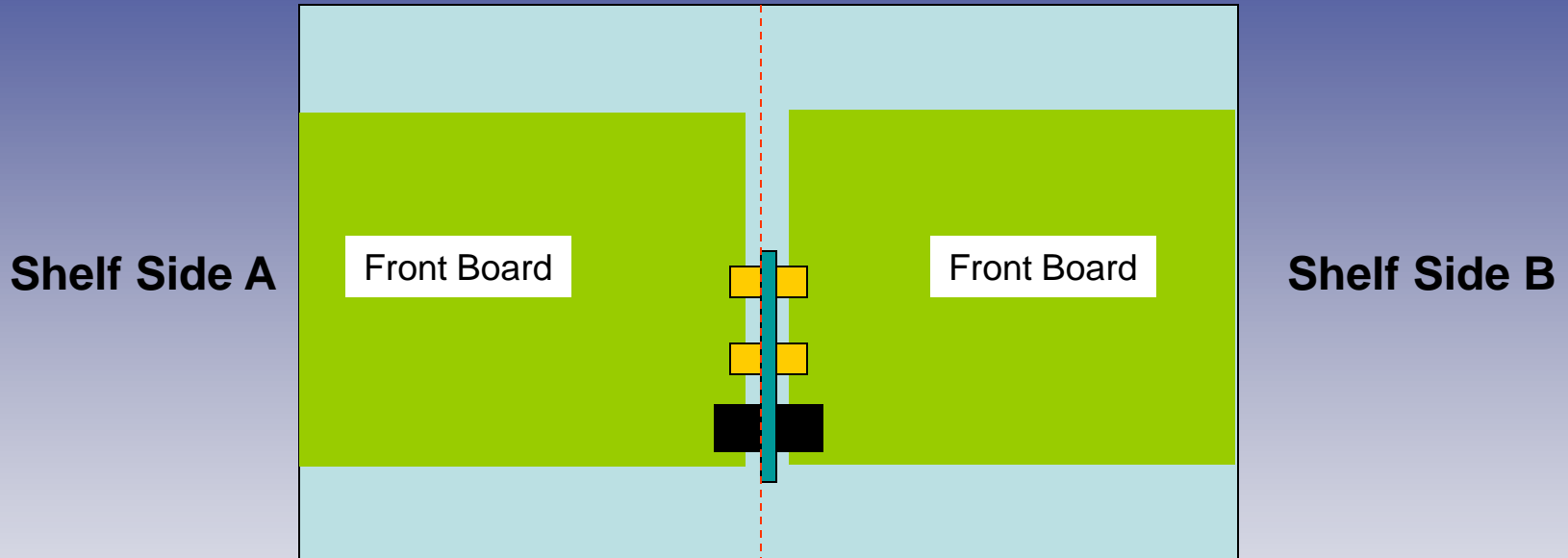
An Extended Board connects with the Zone 1 and Zone 2 Connectors to the Backplane and with Zone 3 interconnect directly to a Front Board. An Extended Board can be installed into **Side A** or **Side B** of an AdvancedTCA[®] Extensions Shelf.

ATCA Extension – Extended Front Board Zone 1 & 3 interconnect



**An Extended Board connects with the Zone 1 Connector to the Backplane and with Zone 3 interconnect directly to a Front Board.
An Extended Board can be installed into **Side A** or **Side B** of an AdvancedTCA Extensions Shelf.**

ATCA Extension – Monolithic Backplane Sectional Side View



The Monolithic Backplane Shelf supports two Backplanes, Side A and Side B with both Backplanes connected together forming a single monolithic Backplane. Backplanes on Side A and B typically share a single Base I/F and a single Fabric I/F switching plane.

Thank You!



ATCA Chassis Platform with Dual Star 40 Gb Backplane