



Forces Requirement Proposal

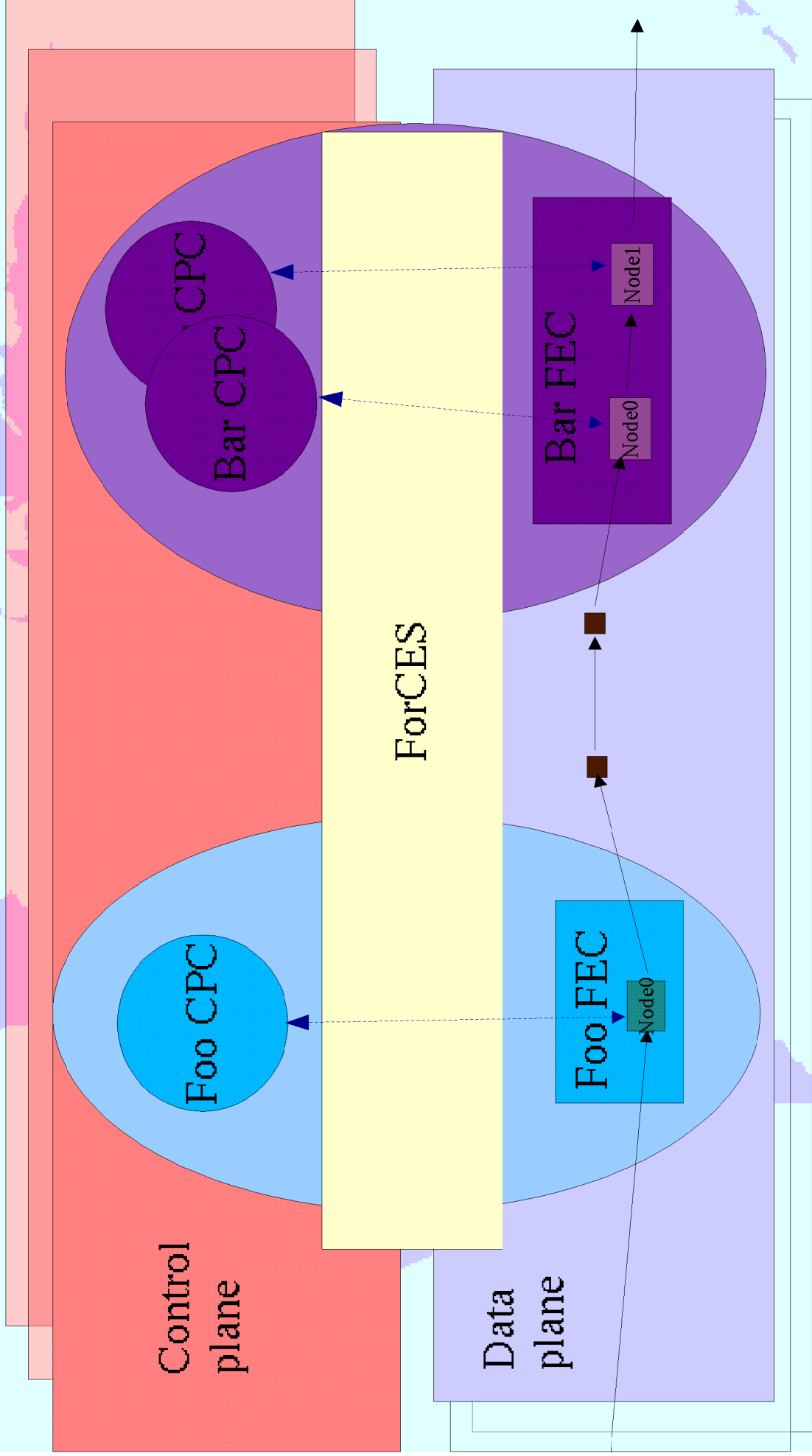
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Background

- This is derivative proposal from the other draft
- Some differences exist
 - Should be resolved RSN
 - Merge of two drafts is in progress

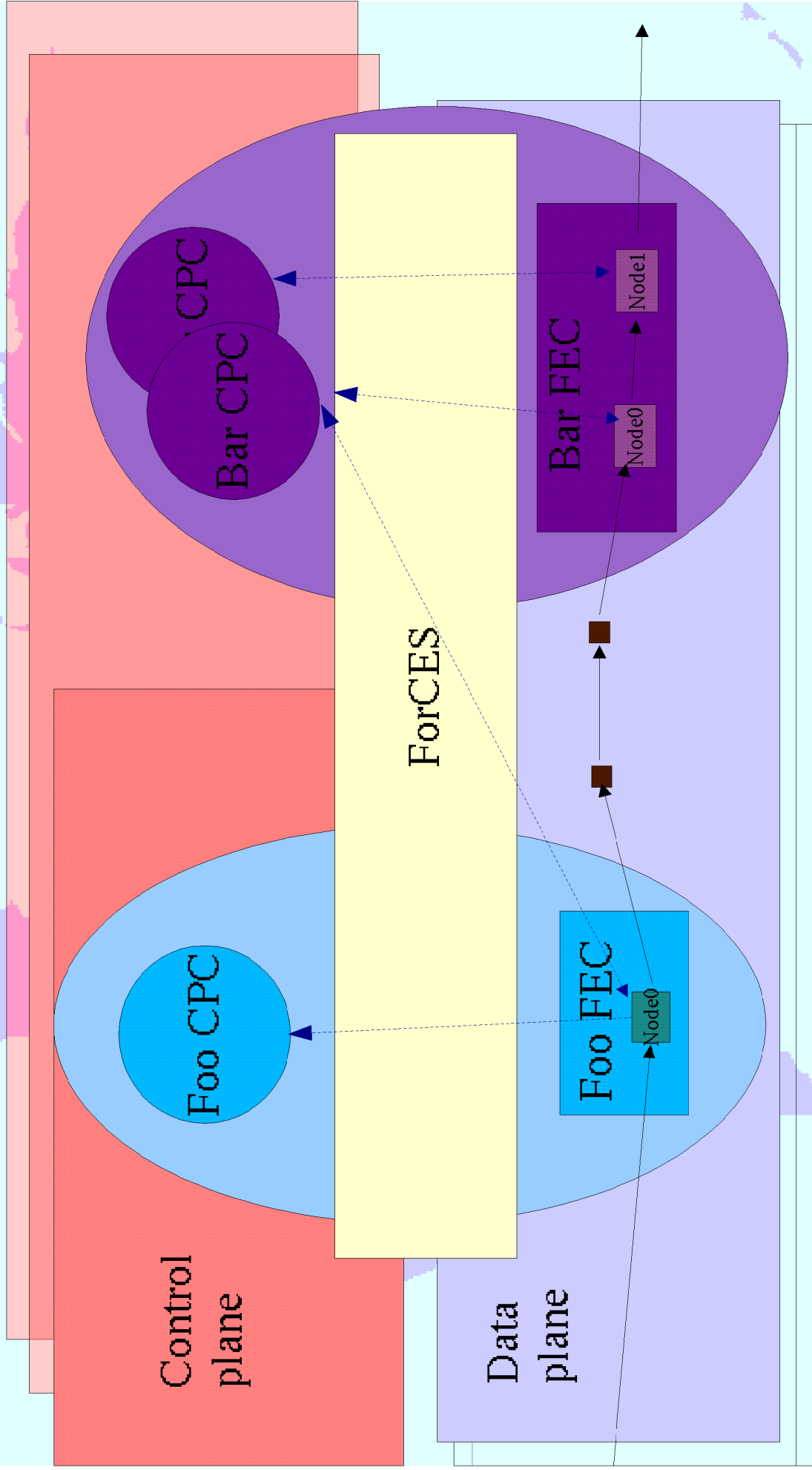
IP Service Model



Legend:

- Service foo
- Service bar

IP Service Model



Some Definitions

A NE constitutes a Control Plane(CP) and Forwarding Engine(FE)

- An IP service defines the *treatment of a described IP packet once it enters the NE*
- An IP service provides *cohesiveness between the CP and the FE*

● A CP provides *execution environment for signaling and management activities for IP services*

- The goal of the CP is to configure the FE for IP services
 - ◆ A Control Plane Component(CPC) resides within a CP and is responsible for configuring the FE portion of the IP service

- The FE is the first access point for a packet coming in or out of the network
- The FE *manages described packets* traversing it to achieve a defined service
 - ◆ The Forwarding Engine Component(FEC) maps to the IP service specific CPC
 - ◆ The FEC messages described(by the CPC) packets to deliver a service

General Requirements

- FE and CE **MUST** communicate via ForCES
- They **MAY** reside on different physical devices
- can use any known interconnects
- There **MAY** be a proxy that understands ForCES
- A single CE **MAY** control more than 1 FE
- More than 1 CE **MAY** control a single FE
- Redundancy or different services
- ForCES **MUST** restrict itself to CP<-->FE

FE general Service requirements

- Port Functions to CP
 - The FE **MUST** provide access to physical port resource queries
- Event notification capability and discovery
 - Borrow from GSMP for standard events
 - Notification **MUST**
- NM notification capability and discovery
 - **MUST** provide statistics
- Vendor specific functions
- Request for packets by CP
 - **MUST**

IP Service requirements

- IP Services and their control **MUST** use templates (such as those used in GSNP)
- Allows for simple mechanisms for capability and service discovery
- Well known services **MUST** be standardized
- All standardized services **MUST** be issued unique ids
- A range of id ranges **MUST** be reserved for opaque services

Protocol Requirements

- There **MUST** be mechanisms that allow to define a reliable vs non-reliable protocol
- There **MUST** be AAA mechanisms
- There **MAY** be a CP \leftrightarrow FE dynamic discovery
 - The FE discovers the CP
 - There **MUST** be at least static configuration
- There **MUST** be mechanisms for FE \leftrightarrow CP discovering loss of connectivity
- There **MUST** be mechanisms to allow for a FEC to leave a CPC (and join another)
 - Very service specific; facilitates checkpointing

Service discovery and service provider

- The CP provides *service* to the FE
- Look at this as a client-server model
 - The server is the CP
 - The client is the FE

Protocol Applicability

- The clear separation of Control and data path allows for reuse in other areas
 - Isp
 - Midcom
 - OPES (is this a bad word?;-->)