# Application Layer Multicast Extensions for RELOAD draft-samrg-sam-baseline-protocol-03

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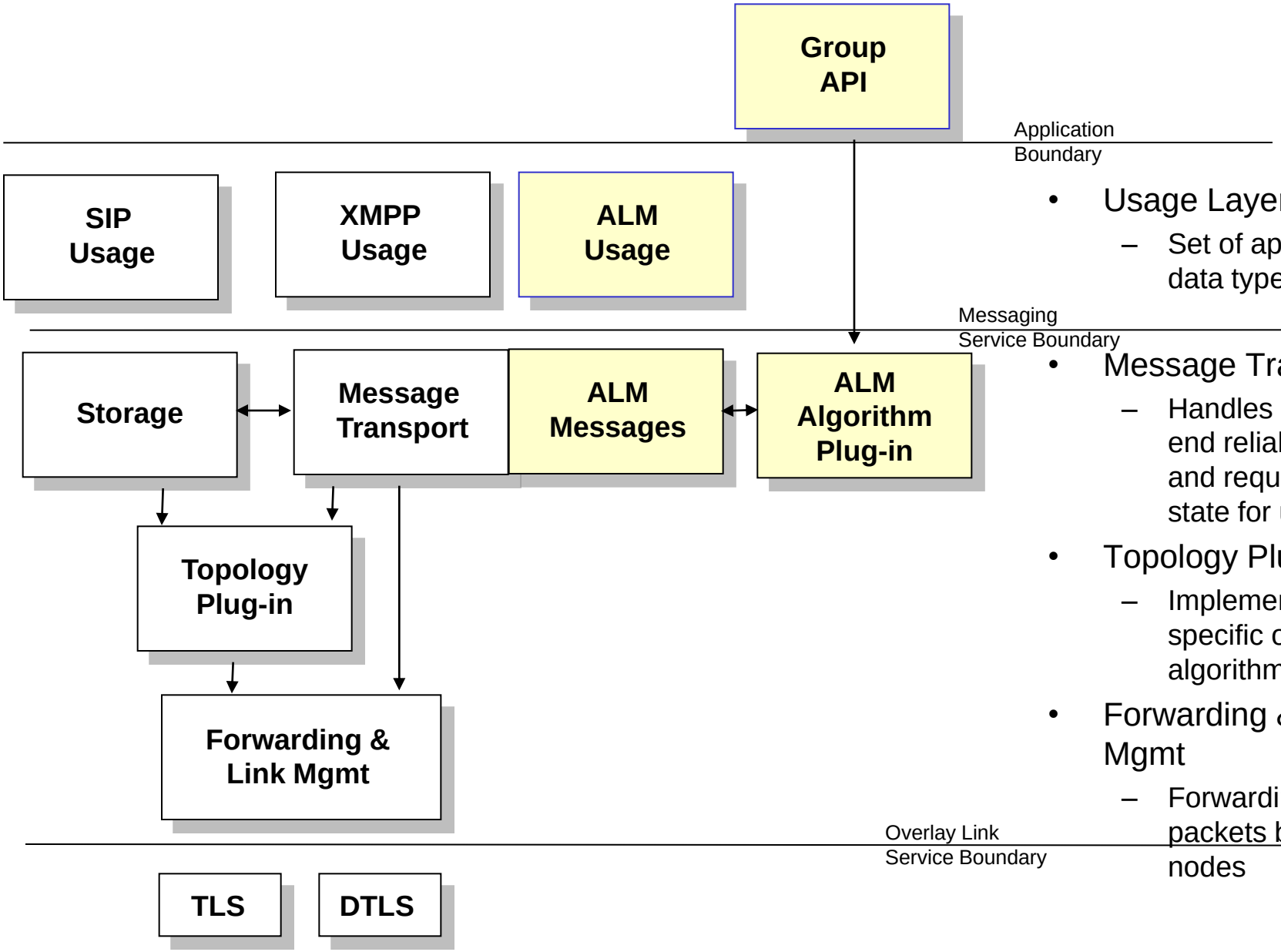
3/29/2012

# Changes Since Previous Version

- Compatibility with RELOAD v21
- Add P2PCast as a second algorithm for ALM usage.
- Incorporated some changes from discussion on mailing list
- Added some references

- Any comments welcome!

# ALM Architecture Extensions for RELOAD




- Usage Layer
  - Set of application data types
- Message Transport
  - Handles end-to-end reliability and request state for usages
- Topology Plug-in
  - Implements specific overlay algorithm
- Forwarding & Link Mgmt
  - Forwarding packets between nodes

# P2PCast

- P2PCast
- Creates a forest of trees
- Similar to Splitstream, which is based on Pastry
- Independent on the underlying P2P algorithm
- Content provider splits the stream into f stripes
- Each tree is an (almost) full tree of arity f.
- Trees are conceptually separate: every node of the system appears once in each tree, content provider being the source in all of them.
- Every node is a leaf in all the trees except for one, where the node serves as an internal node (proper tree)
- Ensures nodes contribute as much bandwidth as they consume

# P2PCast integration

- P2PCast uses defined messages for communication between nodes during reorganisation.
- Encapsulated by the message type REFORM.
- P2PCast message is included in the Options parameter of REFORM.
  - TAKEON: To take another peer as a child
  - SUBSTITUTE: To take the place of a child of some peer
  - SEARCH: To obtain the child of a node in a particular stripe
  - REPLACE: node sheds off a random child
  - DIRECT: To direct a node to its would be parent
  - UPDATE: A node sends its updated state to its children

# Open Issues

- Should any other ALM algorithms be mapped?
- Define parameters for RELOAD config file for ALM usage
- Request to go to last call