FUJITSU

NICC State of Ethernet
ALA

Chris Gallon – Fujitsu

Contains material from BBF contribution
2009.826 authors

Oliver Thorp - Fujitsu

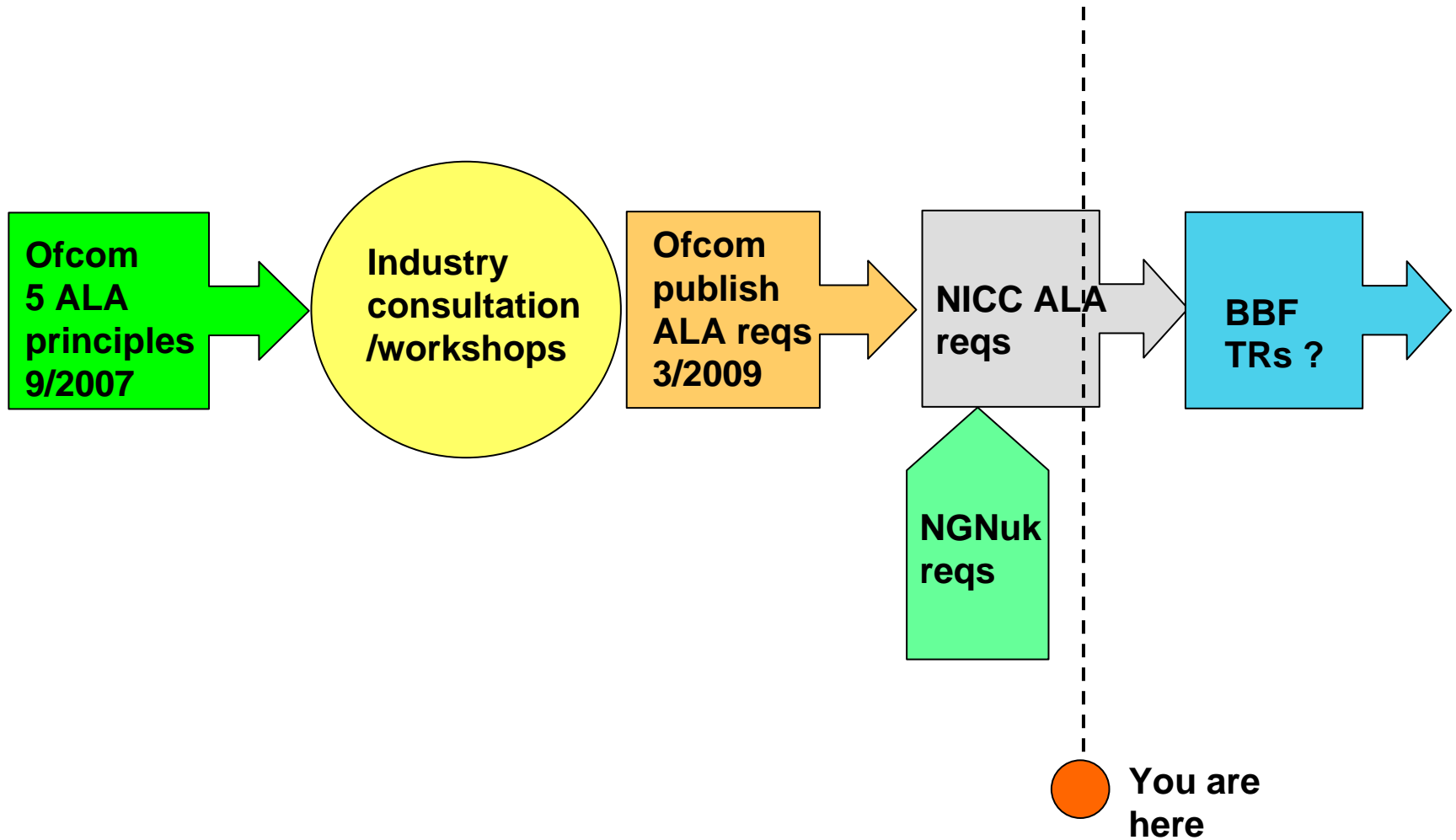David Thorne - BT

Gavin Young - C&W

Purpose

- Provide an update on the status of ALA standardisation within NICC

- Place ALA in the wider industry context.

- Request feedback from COTS as to the suitability of ALA for an open generic interface to Service Providers for next generation access networks.
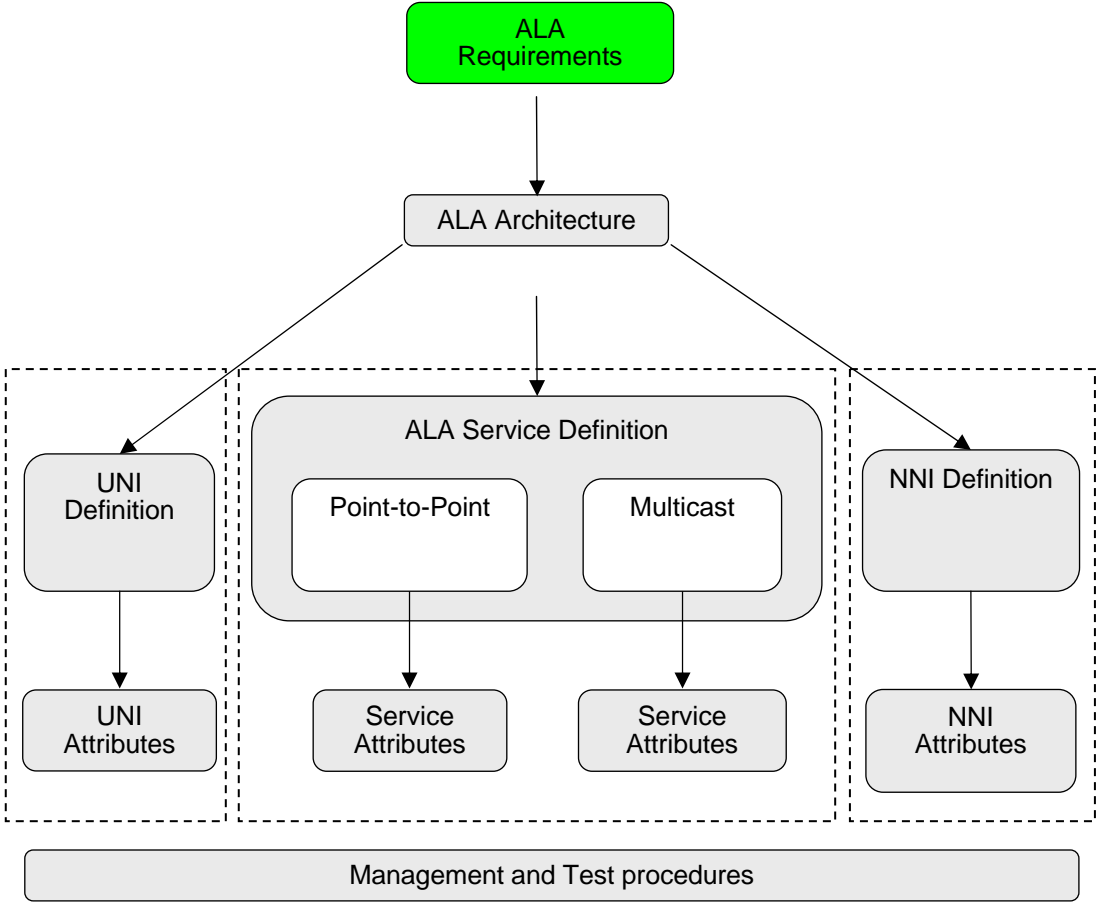
Background

- Ofcom, the UK Telecom Regulator, is encouraging the deployment of Next Generation Access (NGA) infrastructures and equipment to provide access speeds well in excess of those available from exchange-based ADSL

    - includes FTTC, FTTP and cable

- ALA aims to define a standardised way of providing L2 (Ethernet) access (and backhaul) so that Network and Service providers still have a choice of competitive access.
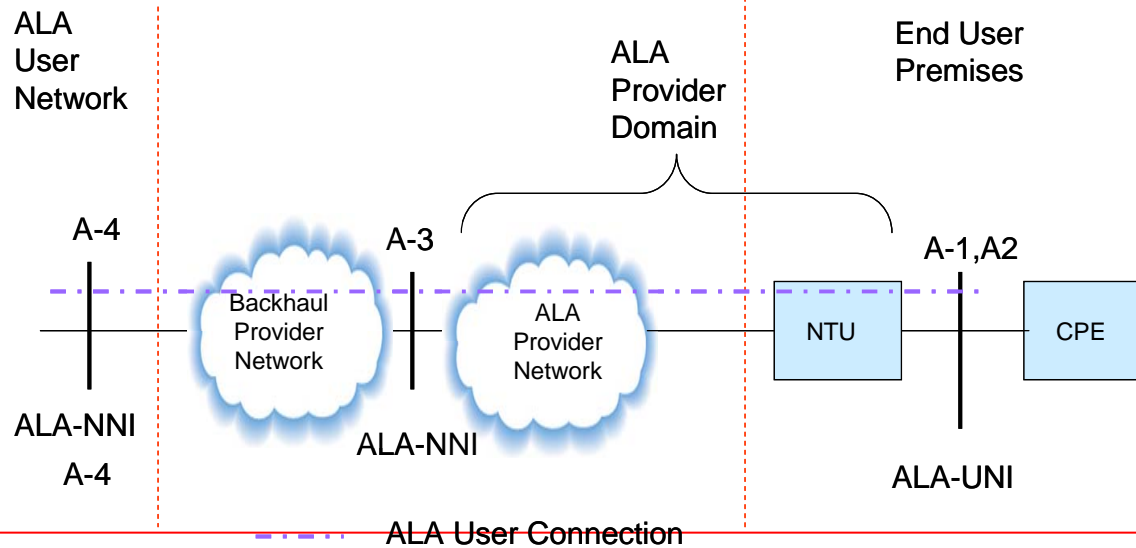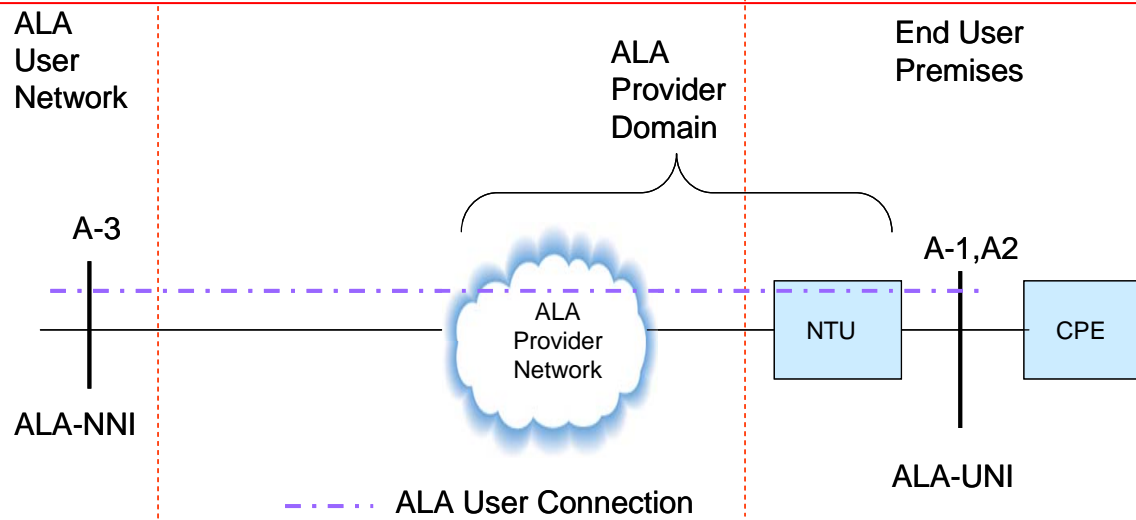
Process and Timeline Overview

Ofcom 5 ALA principles 9/2007 → **Industry consultation /workshops** → **Ofcom publish ALA reqs 3/2009** → **NICC ALA reqs** → **BBF TRs ?**

NGNuk reqs ↑

You are here

NICC ALA Document Framework

Architecture

Ethernet ALA

ALA Highlights

- L2 Ethernet connectivity, UNI-NNI
  - E-Line and multicast tree only
  - higher layer functionality only where explicitly needed, e.g. multicast
- Architecture supports interconnect at a variety of locations
- 1:1 VLAN model only, except for multicast
- Multi-service support
  - defined set of packet treatments
  - multiple priorities
  - parameterised QoS (with caveats)
  - Policing
- Wires-only support
- Resilience options (multi-link)
- Scales to >4094 connections at the NNI
- L2 separation between ALA-users
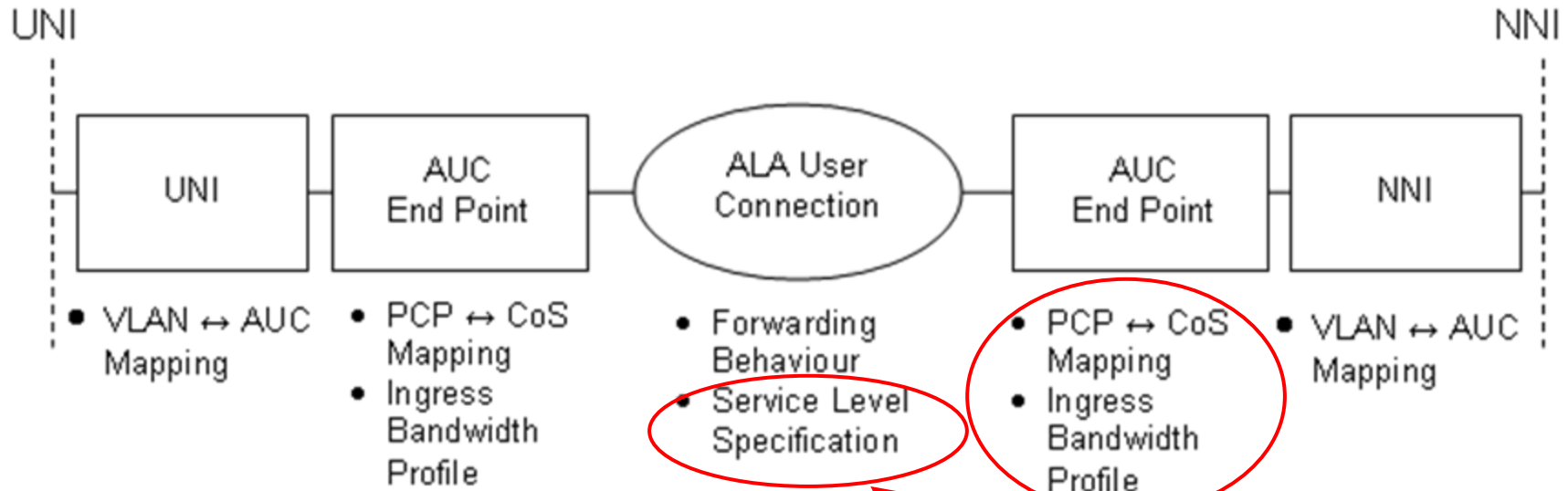- No direct EU-EU connection
- Defined frame transparency

Example Approach:
Point to Point ALA User Connection
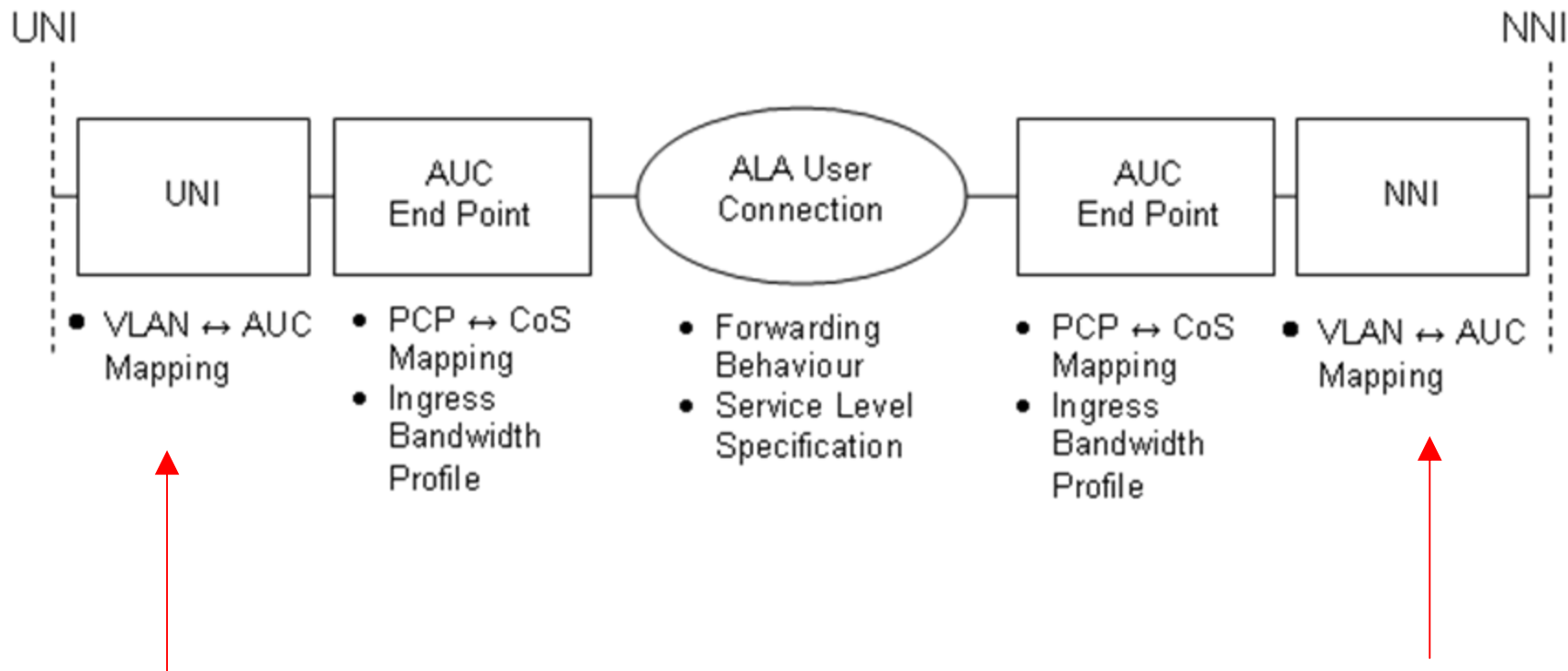
Service Frames at a UNI are always VLAN tagged

Service Frames at an NNI are either S-Tagged or S & C-Tagged depending on the AUC

Example Approach:
Point to Point ALA User Connection

UNI   NNI

| UNI | AUC End Point | ALA User Connection | AUC End Point | NNI |

- VLAN ↔ AUC Mapping
- PCP ↔ CoS Mapping
- Ingress Bandwidth Profile
- Forwarding Behaviour
- Service Level Specification
- PCP ↔ CoS Mapping
- Ingress Bandwidth Profile
- VLAN ↔ AUC Mapping

Downstream Shaping / Queuing at UNI will not be specified directly

This will be a function of the Bandwidth Profile, Class of Service and the Service level specification of:

- Frame Delay
- Frame Delay Variation
- Packet Loss

Leveraging BBF and other Documents

- The output of the NICC work is likely to be a profile of both MEF Technical Specifications and Broadband Forum TRs

- NICC is likely to use functionality from:
    - Broadband Forum TR-101, TR-156
    - MEF ENNI
    - WT-145 and its children

- The aim of the NICC work is not to define new nodal requirements
    - This will be left to Broadband Forum WT-145 and its follow-on documents

TOC of the NICC ALA requirements document

Ethernet ALA

Outstanding Issues

- Scalability – how many ALA-users per line ?
- Is there a need for the ALA UNI to provide network synchronisation to the ALA User?
  - This would allow the ALA User to offer a voice service capable of carrying voice band data
- Impact and scope of wires-only
  - Infrastructure independence
  - Performance
  - Product definitions
  - Management and fault finding

ALA and COTS

- NICC Ethernet working group requests feedback from COTS as to the suitability of ALA for their problem.
  - NICC Ethernet working group is open to receiving requirements and technical input for ALA from the COTS project.
  - BUT time is short as the target is to have draft ALA service and NNI/UNI specifications for the end of this year.
- NICC Ethernet working group would also welcome collaboration from the COTS project in the area of management and test procedures
  - Getting these procedures right will be critical in limiting operational and OSS costs associated with ALA.
- NICC Ethernet working group would welcome a COTS representative at their next meeting (October 1st, Riverside House, London)
- Note attendance at the Ethernet Working Group is free and open to any NICC member organisation.

Ethernet ALA Contacts

- Working Group Chair
  - Chris Gallon, Fujitsu – <u>c.gallon@ftel.co.uk</u>
    +44 7970 474 011

- Working Group Vice-Chair
  - Gavin Young, Cable & Wireless – gavin.young@cw.com