**Contribution**

**TITLE:** IP Interconnection Routing Outline – Proposed Modifications to Section 4 – Current Aggregate Approach

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**ABSTRACT**

This document provides proposed modifications to the description of currently existing routing data exchange methods in the IP Interconnection Routing Outline Section 4.

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The following text is proposed to update Section 4 – “Aggregate Approach Based on Existing NANP Data Structures:”

Some service providers are already exchanging voice traffic over IP facilities. This section details how routing for such exchanges has been implemented based on existing industry data in the LERG and NPAC supplemented with the bilateral exchange of information to map LERG and/or NPAC identifiers to IP connection information.

Existing approaches to IP interconnection routing rely on NANP constructs for aggregating telephone numbers into groups and then associating one or more routes with the TN group. Common methods of TN group aggregation are, OCNs – alone or in combination with LATA or other geographic groupings, central office switch CLLIs, and central office codes (NPA-NXXs, where it is assumed that inter-carrier routing is performed on NPA-NXX after LNP correction). A “route” for exchanging voice traffic over IP facilities is defined by a set of NNI interconnection points in the originating and terminating networks and the IP network path between them. The interconnection points may consist of a single ingress or egress SBC or a logical grouping of SBCs, such as co-located SBCs in a failover or load-sharing arrangement. Each SBC is identified by one or more SIP signaling IP addresses. RTP media IP addresses may or may not be exchanged in advance. The IP network path or paths for SIP signaling and RTP media consists of one or more engineered paths or dynamic paths (not fully specified between PE routers) between the originating and terminating SBCs. The paths may consist of a single dedicated link or Ethernet service – such as 1Gbps or 10Gbps Ethernet between PE routers, multiple dedicated links or Ethernet services in a load-sharing or failover arrangement (for instance with BGP re-routing), a private multi-lateral IP transit network – such as a transport-only IPX, or public Internet connectivity. While NNI routes may use dynamic best-effort IP network paths such as public Internet, the paths are often explicitly specified and engineered to the capacity, QoS, and redundancy/reliability requirements of the NNI traffic flow. A TN group may be tied to a single route or to multiple routes in sequence, load-distribution, or active/standby arrangements as negotiated by the carriers. In a transitional environment, IP interconnection routes may be intermixed with one or more TDM routes in any of these arrangements for terminating one or more TN groups.





When a route is established, the carriers agree, among other characteristics of the traffic to be sent and received, on the TN groupings that will be terminated via the route and how the route relates to other routes that handle the same or overlapping TN groupings. Once established, routing patterns for particular TN groupings are relatively static. Maintenance of the routing information may occur due to explicit notification between carriers, such as when new routes are implemented or TN groupings are to be shifted in bulk between different routes, or implicitly via LERG publication, such as when a new NPA-NXX code is added to an existing switch CLLI with already-established routes between the carriers.