

Point Code Emulation™ SOLUTION SHEET

for SEGway™ STPs

PT's Point Code Emulation™ (PCE) solution is a SEGway™ feature that provides network operators with the ability to transparently configure and manipulate SS7 nodes without disrupting or reconfiguring the public SS7 network. Point Code Emulation is similar to NAT on an IP network, whereby private network addresses are hidden from the outside world and incoming messages are re-routed to their proper destination. Using PCE, network operators have more control over their networks by minimizing administrative and coordination delays when introducing, retiring, or reconfiguring SS7 nodes. Typical Point Code Emulation applications are switch cutovers, A/F Link consolidation, reduction of STP interconnection charges, or point code preservation/conservation.

How PCE Works

PCE allows all unique point codes in your network to be “hidden” from the public SS7 network and represented as a single node to the outside world. To illustrate, your “private network” will continue to operate as a normal network within itself, with each node having a unique point code, links, and routes to an STP. PCE modifies the routing label and unique CIC identifiers so your network appears as one large switch to the outside world. This means no one needs to know about what goes on in your network – you just make the changes to suit your application, and all the outside world knows is that you need to add additional trunks. This is a very simple process when compared to obtaining new point codes, coordinating inter-company translations, soaking new links, and propagating these changes throughout multiple nodes in other networks that have different operating constraints and challenges.

BENEFITS

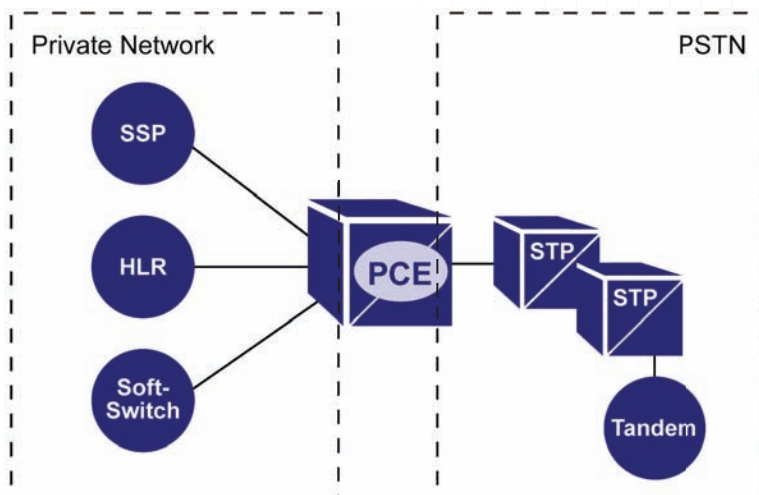
Expands Signaling Networks Without the Addition of Costly Point Codes in the Public SS7 Network

Simplifies the Addition of New SS7 Nodes

Lowers STP Port Charges by Concentrating SS7 Links

Use With IP or Circuit-Switched SS7 Links

Simplifies Trunk Migration



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The PCE Application

With Point Code Emulation™, ISUP traffic flowing toward a node that resides in a private network will be routed by the SEGway™ STP to an internal, virtual SS7 point code known only to the public network. The PCE application then changes the routing label and routes the ISUP messages to the appropriate node in the private network based on the point code/Circuit Identification Code (CIC) that corresponds to that node as per the following example:

Incoming routing label **BEFORE** PCE

OPC	DPC	CIC
1.1.1	2.2.2	3317
1.1.1	2.2.2	1134
1.1.1	2.2.2	4326

Incoming routing label **AFTER** PCE

OPC	DPC	CIC
1.1.1	3.3.3	1000
1.1.1	4.4.4	1000
1.1.1	5.5.5	1000

Messages flowing from nodes in the private network to the public network are routed by the SEGway STP, with the Originating Point Code (OPC) of the private node substituted with the point code whose presence is known within the public network. Messages between nodes in the private network are routed locally by the STP using the OPC and Destination Point Code (DPC) and need never traverse the public network.

Incoming messages **BEFORE** PCE

Message	From PC	Concerning
TFP	1.1.1	3.3.3
TFA	1.1.1	2.2.2

Incoming messages **AFTER** PCE

Message	From PC	Concerning
CGB	1-1000	1.1.1
CGU	1001-2000	1.1.1

In the event of a node or route failure within the private network, a Circuit Group Blocking (CGB) message notifies the public network that a particular CIC range (representing the private point code) is unavailable. Congestion procedures remain unchanged. TCAP traffic remains unaffected as PCE maps the transaction IDs among and from private nodes to the public network. Incoming TCAP traffic is managed by using user-selectable patented algorithms.

The Business Case

PCE is a cost-effective solution for expanding networks where new point codes are rare and expensive, and minimizes the number of direct SS7 links to an STP pair. Expanding private networks are accessed via trunk-based routing for ISUP traffic and Transaction Identifiers with GTT routing for TCAP traffic. Benefits of PCE include:

- Quick rollout of new services/nodes
- Next-generation network expansion without requiring additional point codes
- Cost reduction by reducing the number of point codes presented to the PSTN
- F-Link consolidation to reduce port and/or SS7 link exhaustion on existing nodes

Enhanced PCE

For carriers who want to cut over and retire legacy switches, Enhanced PCE offers a simple, low-risk solution to the “flash cut” traffic problem. Benefits include:

- Transparent node migration by using CIC routing during node replacement
- Point code sharing and easy local point code (LPC) modification

ORDERING INFORMATION

To discuss specific requirements and/or pricing, contact sales@pt.com.

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