



# Application Note

## **Retiring Legacy Class 5 Switches While Protecting Investment in V5.2 Access Networks**

**Powered By AudioCodes Mediant™ 3000 VoIP Gateway**

### **Migration from Class 5 to NGN**

There is evidence to suggest that during the past year, carriers of all sizes are beginning to lean towards dismantling or significantly consolidating their TDM Class 5 assets and transition towards NGN Networks.

A crucial and often overlooked aspect of the Telecommunication Network is the Access Network. There are different approaches for connecting the Access Network to the Core Network and to migrating the V5 TDM based legacy Access Network to the IP based network. One approach is by introducing a Core Access Gateway that connects remote TDM DLCs to an NGN Softswitch.

This application note will outline the benefits of extending NGN services to the Access Network. In addition, we will demonstrate why the Core Access Gateway provides the preferred solution for V5.2 TDM Access Networks.

### **Class 5 Replacement Benefits**

TDM Class 5 switches were supplied by traditional voice vendors. Many of these circuit switches are reaching end-of-life status or require software/hardware upgrades to meet technical and/or regulatory requirements, such as local number portability, or lawful intercept.

Designed to replace these aging and monolithic circuit switches, Class 5 alternatives can sometimes be purchased and deployed at a lower total cost rather than purchasing software upgrades from an incumbent equipment maker. Faced with the prospect of additional investments in aging and inefficient equipment, carriers are turning to Class 5 alternatives. When the first of the Class 5 alternatives emerged a few years ago, the most attractive feature the platforms offered was a significant reduction in footprint and electrical power consumption — as much as 90% in some cases — and a migration path to packet-based voice technology. Rural and independent carriers have quickly begun to realize that they must respond to competitive incursions into their customer base from wireless carriers, MSOs, and Voice over Broadband (VoB) players.

Significant cost savings can be achieved by C5 migration into the carrier NGN:

- Operation and maintenance of one converged network for Data and Voice services
- Footprint saving resulting in substantial real-estate savings
- Substantial electricity savings
- Delivery of new services resulting in more efficiency in terms of time and cost
- Increased freedom to select multiple vendor solutions

### **Alternatives for Access Network Transition to IP**

Operators deploying NGNs must consider the installed base. Indeed, the migration from the legacy network is one of the greatest challenges that operators are facing. One of the main requirements for carriers migrating their Class 5 infrastructure to VoIP is the ability to reuse all of their access equipment and infrastructure, without disrupting POTS users.

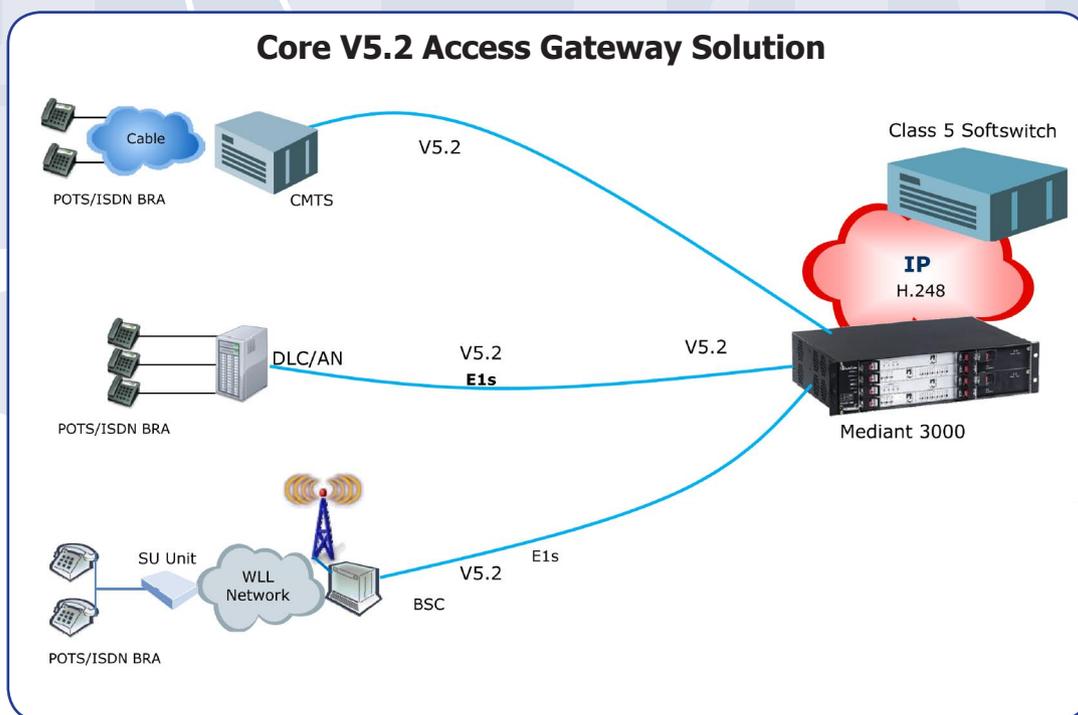
In the next sections we will concentrate on the carriers' alternatives for connecting the Access Network to the NGN Softswitch.

### **IP in the Loop-Voice Over BroadBand (VoBB)**

In this approach, voice migration cannot be considered complete until all legacy telephones have been replaced by IP Phones or multi-media devices (or by installing an IAD at customer premises). This process of moving subscribers to a new device may take decades. Operators will, in fact, begin by offering VoIP to subscribers as a second line service bundled with broadband services, while leaving the existing POTS service intact. ITSPs, MSOs and new emerging service providers (like Vonage/Skype) that do not have a traditional Access Network will prefer to adopt this path. This fits end users who are keen to make use of new applications as soon as they become available - the "early adopters".

### **Core IP Solution- Core Access Gateway**

At the other end of the spectrum are the end users who are not interested in the latest "gizmo" and expect to use their existing phone for an entire lifetime. ILECS, IOCs and rural POTS telephony service providers will choose to use a cost-effective Core solution in which the end user will not experience any change.



## Benefits of the Core Access Gateway Solution

For carriers that have a significant amount of standard legacy DLC equipment, upgrading existing access equipment (DLCs, DSLAMs, Muxs, RSUs, WLLs) is not an option due to the enormous costs of new equipment and installation, high risk and disruptiveness.

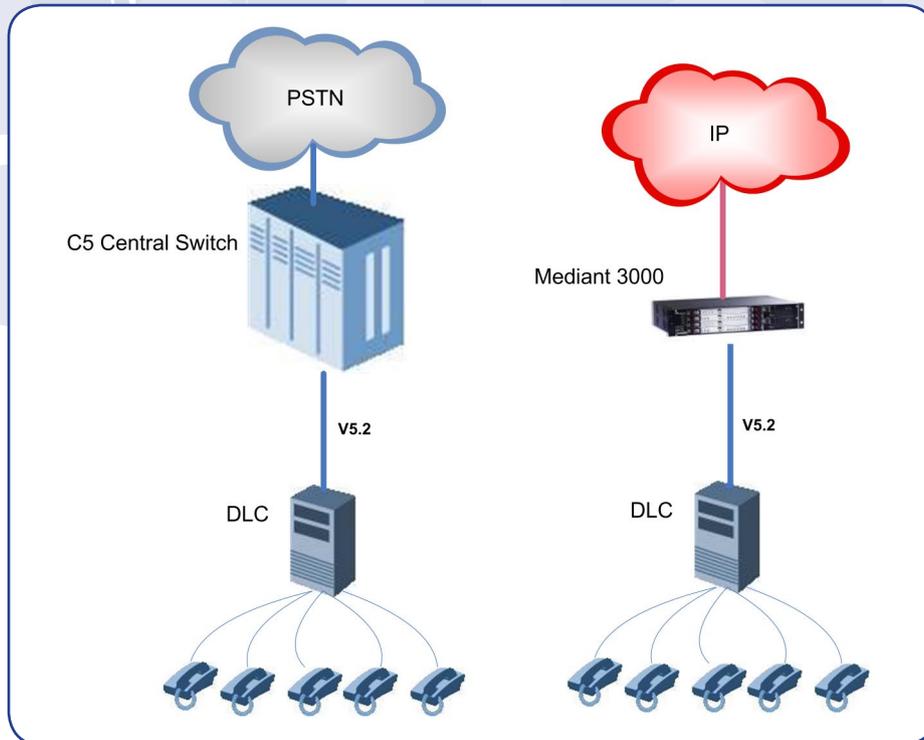
Placing a gateway between the DLC to the Softswitch is less disruptive and can be implemented step by step - migrating a span at a time. This way operating companies can gradually retire Class 5 (or capital investment on Class 5) without disrupting current circuit-switch voice users.

The Core Access Gateway solution is clearly most beneficial in a scenario where the V5 Access Network already exists.

## AudioCodes Solution

AudioCodes provides V5.2 Access Core Gateway functionality on a standard highly available Mediant™ 3000 gateway. This platform is equipped with the high density TP-8410 blades, providing a carrier grade, cost-effective V5.2 Access Gateway solution.

The Mediant 3000, equipped with the high density TP-8410 blade is a compact, cost-effective media gateway platform targeted towards low to mid-sized carrier deployments. The gateway supports from 16 up to 63 E1s, multiple V5.2 Interface groups, all-in-one redundant and non-redundant TP-8410 blade, and provides telephony services for up to 20,000 lines. At 2U height, the small footprint of the Mediant 3000 is especially attractive for central office locations where space is at a premium or for installation at remote sites, as depicted in the following figure.



*Retiring the Class 5 Switch*

## Summary

With this compact, cost-effective Mediant 3000 V5.2 Access Gateway platform you can expand the Class 5 NGN service to the last mile, and benefit from both the capital investment savings and reduced operational costs. The AudioCodes V5.2 access solution allows you the flexibility to migrate and extend NGN into the Access Network.



### About AudioCodes

AudioCodes Ltd. (NasdaqGS: AUDC) provides innovative, reliable and cost-effective Voice over IP (VoIP) technology, Voice Network Products, and Value Added Applications to Service Providers, Enterprises, OEMs, Network Equipment Providers and System Integrators worldwide. AudioCodes provides a diverse range of flexible, comprehensive media gateway, and media processing enabling technologies based on VoIPerfect™ - AudioCodes' underlying, best-of-breed, core media architecture. The company is a market leader in VoIP equipment, focused on VoIP Media Gateway, Media Server, Session Border Controllers (SBC), Security Gateways and Value Added Application network products. AudioCodes has deployed tens of millions of media gateway and media server channels globally over the past ten years and is a key player in the emerging best-of-breed, IMS based, VoIP market. The Company is a VoIP technology leader focused on quality and interoperability, with a proven track record in product and network interoperability with industry leaders in the Service Provider and Enterprise space. AudioCodes Voice Network Products feature media gateway and media server platforms for packet-based applications in the converged, wireline, wireless, broadband access, cable, enhanced voice services, video, and Enterprise IP Telephony markets. AudioCodes' headquarters and R&D are located in Israel with an additional R&D facility in the U.S. Other AudioCodes' offices are located in Europe, India, the Far East, and Latin America.

#### International Headquarters

1 Hayarden Street, Airport City  
Lod 70151, Israel  
Tel: +972-3-976-4000  
Fax: +972-3-976-4040

#### AudioCodes Inc.

27 World's Fair Drive,  
Somerset, NJ 08873  
Tel: +1-732-469-0880  
Fax: +1-732-496-2298

**Contact us: [www.audiocodes.com/info](http://www.audiocodes.com/info)**

**Website: [www.audiocodes.com](http://www.audiocodes.com)**

©2009 AudioCodes Ltd. All rights reserved. AudioCodes, AC, AudioCoded, Ardito, CTI<sup>2</sup>, CTI2, CTI Squared, InTouch, IPmedia, Mediant, MediaPack, NetCoder, Netrake, Nuera, Open Solutions Network, OSN, Stretto, TrunkPack, VoicePacketizer, VoIPerfect, VoIPerfectHD, What's Inside Matters, Your Gateway To VoIP and 3GX are trademarks or registered trademarks of AudioCodes Limited. All other products or trademarks are property of their respective owners.

**Ref. #** LTRM-09046 02/09 V.2