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Information
and Communication
Networks

Migration from TDM to NGN

Michael Sakharov
April 27th, 2004

Migration from TDM to NGN
Agenda

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- **Market Trends and Needs**
- **TDM to NGN evolution**
- **SURPASS hiE 9200**
- **SURPASS hiE deployment scenarios**
- **Conclusion**

Market challenges
Early NGN promises

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The 90s: Aggressive Growth

- Market liberalization
- Explosion of Internet access
- High market capitalization
- Dot.com driven technical hype

Since 2001: Economic Slow Down

- High debt levels
- Less-than-expected growth
- Market driven investments

Since 2003: Maximizing ROA

- Secure current investment
- Step-by-Step investment

Early promises of NGN:

„VoIP is the ultimate cost saver for long-distance and international calls“

“Discard your old network and build a new all-IP network and you will be better off”

NGN promises in the past were:

„Declining prices for long-distance calls don‘t leave much room for earnings“

NGN Realities today are:

“NGN has to guarantee investment protection of existing infrastructure”

Qualitative growth replaces quantitative growth!

NGN will take place
The value proposition of NGN

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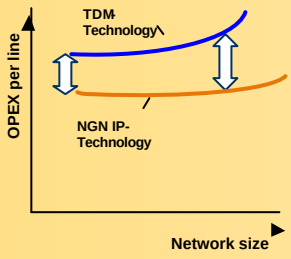
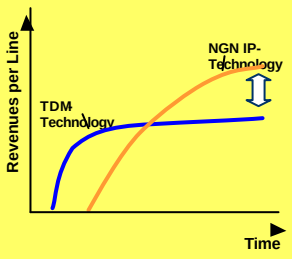
Self-managing Networks



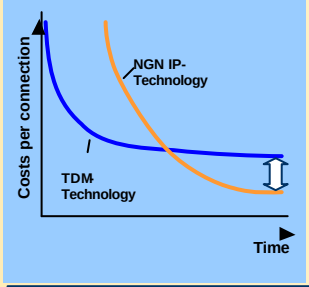
Reduced number of managed nodes & self-routed IP backbone

Revenue-generating Applications



Innovative applications through common IP denominator

Demand-oriented Infrastructure



Internet volumes and technological advancements reduce IP costs

NGN will take place
Drivers of NGN deployment

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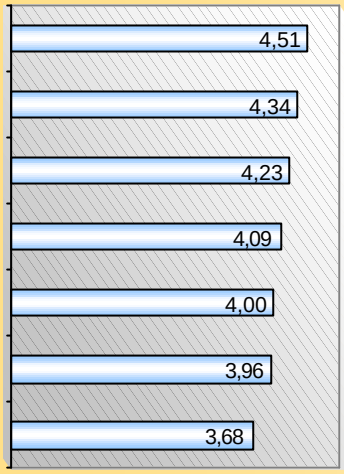

Source: Dittberner Research 2002
Range 1-5: 1=not important, 5= most important

- Most interviewees stated that reduced operational cost is the most critical factor
- Other main drivers for NGN deployment are available new services and scalability

NGN will take place
A major number of carriers are issuing NGN tenders

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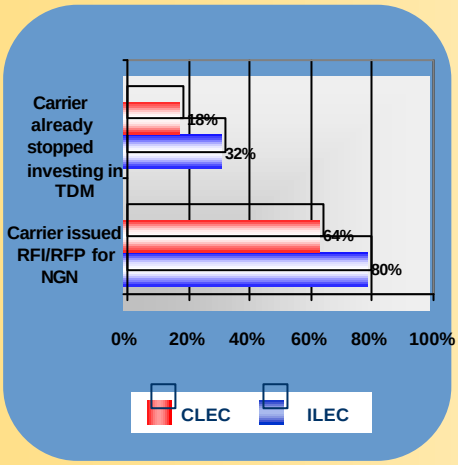

Carriers believe in VoIP as the wave of the future:

- A number of carriers have already stopped investing into TDM
- A major number of carriers are planning to issue a RFI/RFP for NGN solutions

Source: Dittberner Research 2002
Interview with 35 executives of 22 American and European telecommunication operators

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TDM to NGN evolution

Requirements for flexible and cost efficient NGN migration

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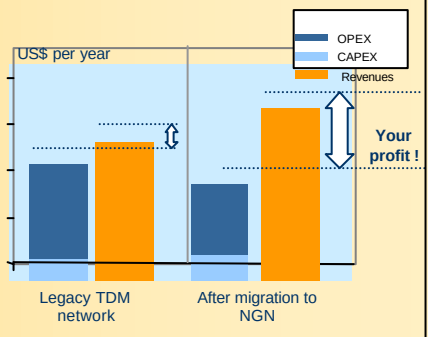
Ideally the TDM to NGN migration should

- Support full legacy feature set
- Allow the introduction of new, revenue-generating services
- Yield low technology introduction costs
- Result in lower Operational Expenditures
- Increase Return on Assets



** Total Cost of Ownership*

TDM to NGN migration should focus on maximizing Return on Assets by reducing TCO* and increasing revenues

Figures based on business cases developed using Gartner Group methodology and research

TDM to NGN evolution path
Overview

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TDM to NGN Evolution Paths

Overlay

Typical Drivers
New revenue opportunities (independent of TDM network)

Migration

Cap & Grow

Typical Drivers
Traffic growth, subscriber line growth, demand for applications

Partial Substitution

Typical Drivers
Network complexity, equipment obsolescence, demand for applications

Next Generation Switching Market in figures

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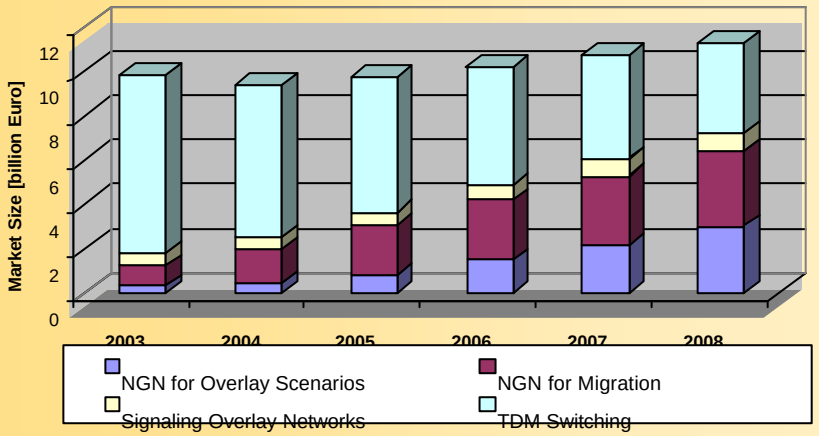
TDM and NGN World Switching Market



** Source: Siemens Research, 06/2003*

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SURPASS hiE 9200 ….the master of control !

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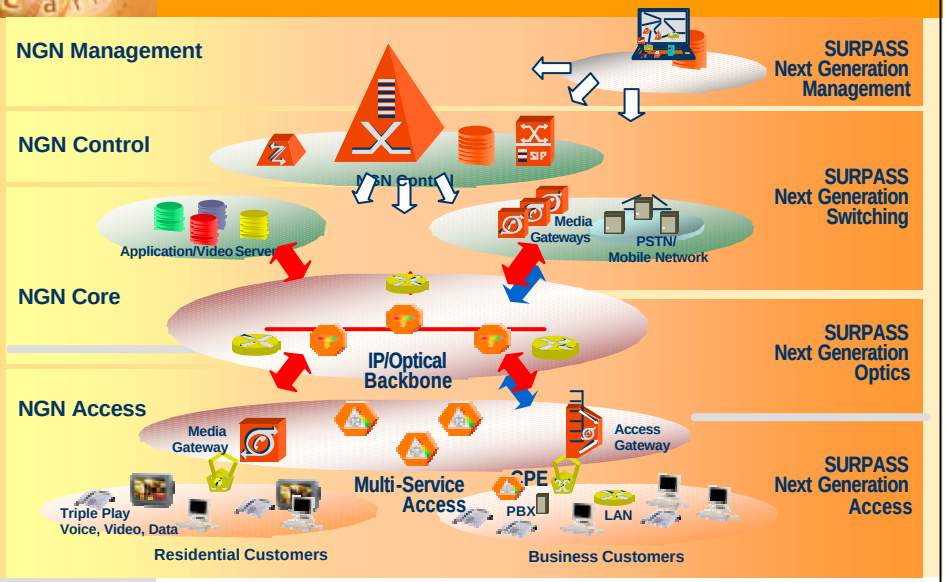

SURPASS hiE 9200
100% TDM plus 100% IP

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EWSD

The world's leading TDM switching system with all its interfaces, protocols and features

+

SURPASS hiQ 9200

The carrier-grade platform for full-featured switching solutions in Next Generation Networks

=

SURPASS hiE 9200

TDM and Next Generation Switching

The features of both platforms combined in one powerful solution

SURPASS hiE 9200
….the center of NGN services and applications

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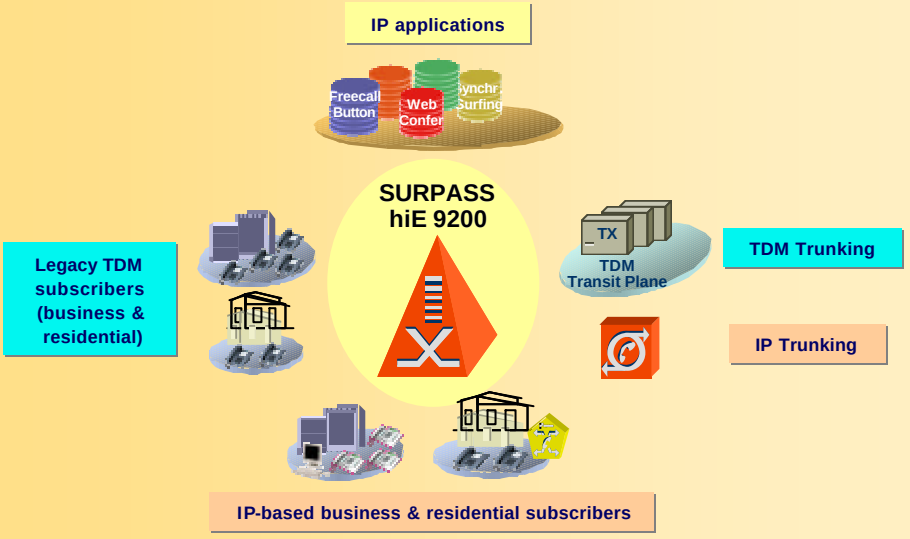

SURPASS hiE 9200
Package Structure

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	TDM package		IP package
Applications	**TDM Applications** • IN (ISL, INAP) • GeoCentrex • TDM Call Center	+	**IP Applications** • IP Centrex • IP Call Center • IN & ISL services for NGN • Multimedia Applications
Local Access (Class 5)	**TDM Local Access** • TDM local exchange	+	**IP Local Access** • IP Direct Access • IP Converged Access
Trunking (Class 4)	**TDM Trunking** • TDM transit exchange	+	**IP Trunking** • IP Trunking
Platform	**TDM Platform** • Numbering & Routing • Charging • Performance & Reliability • SS7 signaling • Lawful Interception	+	**IP Platform** • Interworking to SIP domains • IP Control Protocols (MGCP, H.248, H.323, BICC) • SS7 over IP • Lawful Interception in IP

SURPASS hiE 9200
Overview

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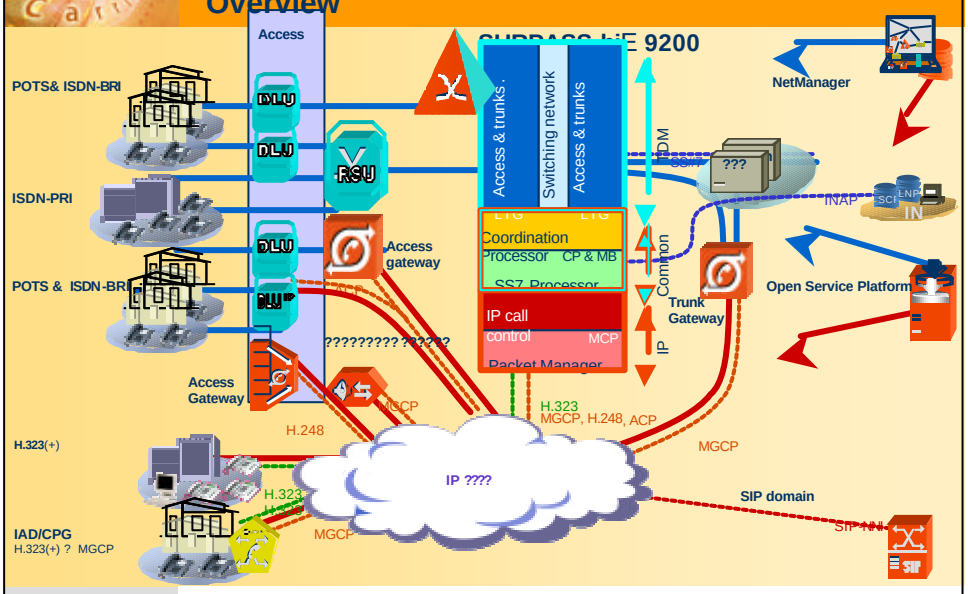

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SURPASS hiE deployment scenario hiE IP Local Access

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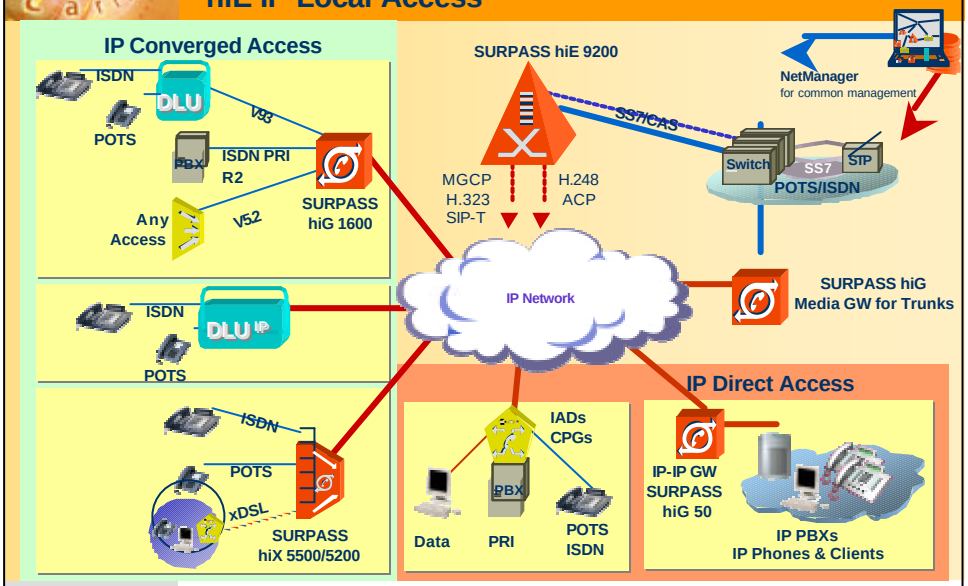

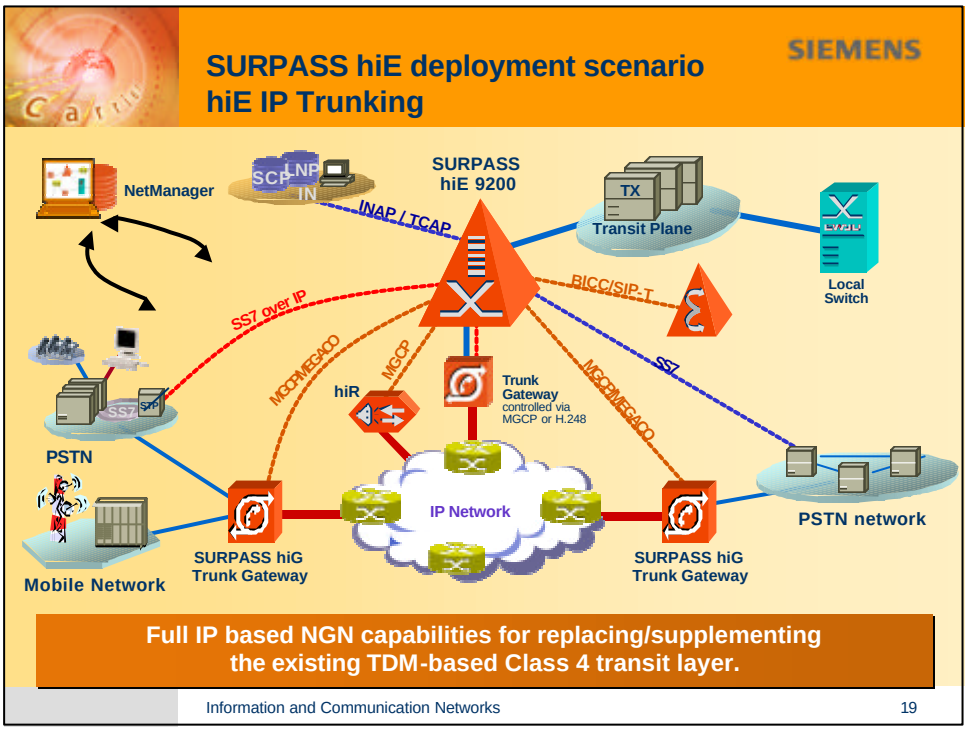
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SURPASS hiE deployment scenario
hiE IP Trunking
NetManager
SCP
LNP
IN
INAP / TCAP
SURPASS
hiE 9200
TX
Transit Plane
Local
Switch
SS7 over IP
BICC/SIP-T
SS7
MGCP/MEGACO
MGCP
hiR
Trunk
Gateway
controlled via
MGCP or H.248
MGCP/MEGACO
PSTN
IP Network
PSTN network
Mobile Network
SURPASS hiG
Trunk Gateway
SURPASS hiG
Trunk Gateway
Full IP based NGN capabilities for replacing/supplementing
the existing TDM-based Class 4 transit layer.
Information and Communication Networks
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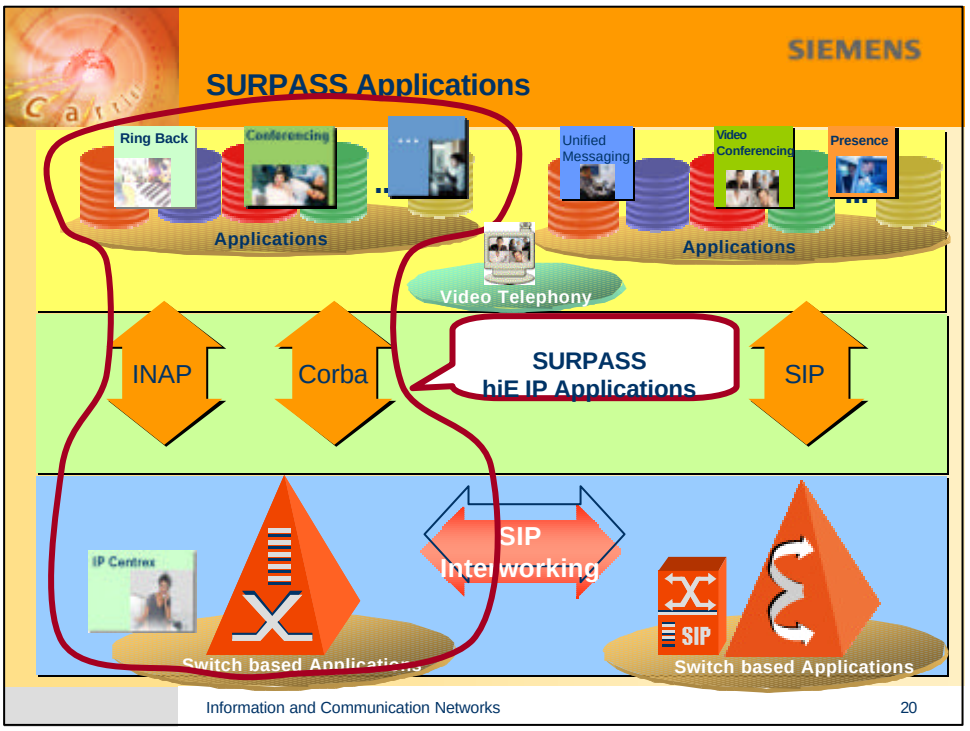
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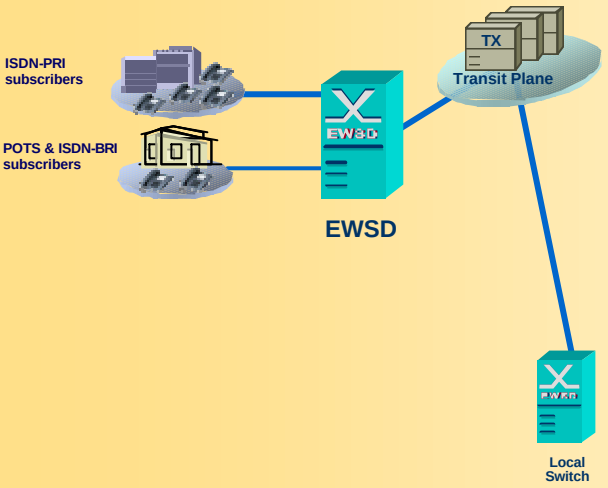
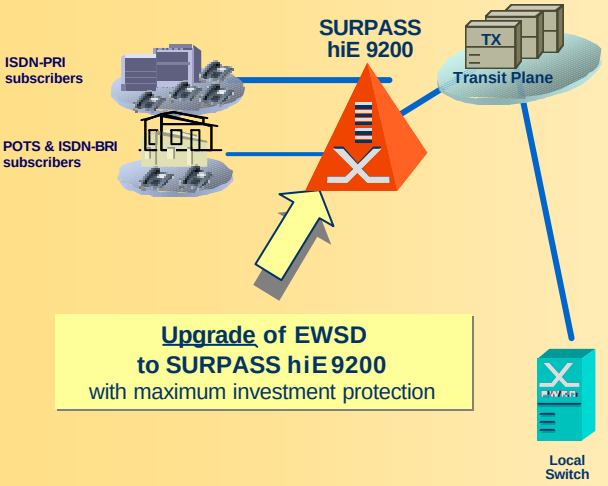
SURPASS Applications
Ring Back
Conferencing
Unified
Messaging
Video
Conferencing
Presence
Applications
Applications
Video Telephony
INAP
Corba
SURPASS
hiE IP Applications
SIP
IP Centrex
SIP
Interworking
SIP
Switch based Applications
Switch based Applications
Information and Communication Networks
20

EWSD migration to SURPASS hiE



EWSD migration to SURPASS hiE
Evolutionary steps into NGN with SURPASS hiE



Upgrade of EWSD to SURPASS hiE 9200 with maximum investment protection

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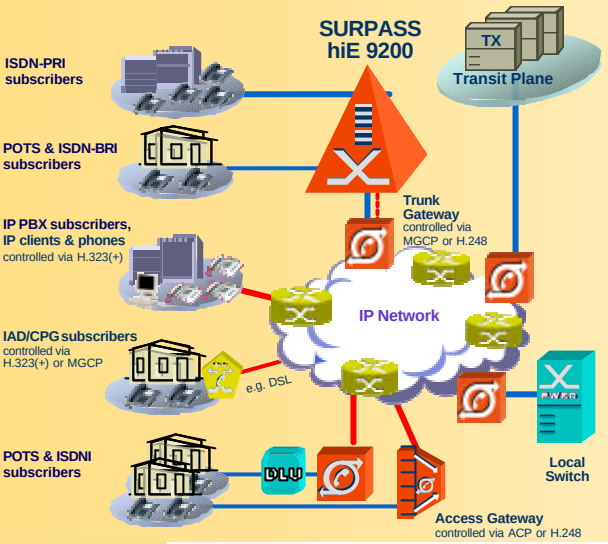
EWSD migration to SURPASS hiE
Evolutionary steps into NGN with SURPASS hiE



Infrastructure-driven
NGN solution

IP Trunking for connections to

- the transit plane
- other local switches, making the transit plane obsolete

IP Local Access solutions to

- connect legacy subscribers to the NGN
- consolidate the network by replacing local switches

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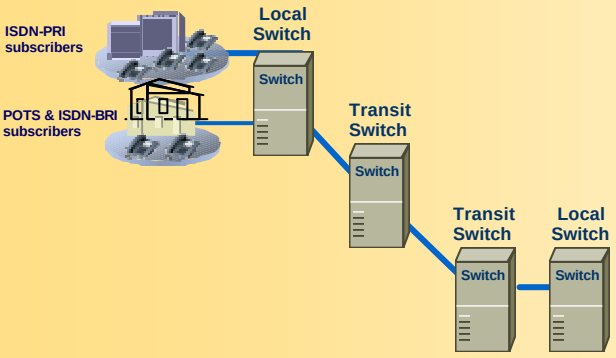
SURPASS hiE
Any switch replacement



SURPASS hiE
Any switch replacement

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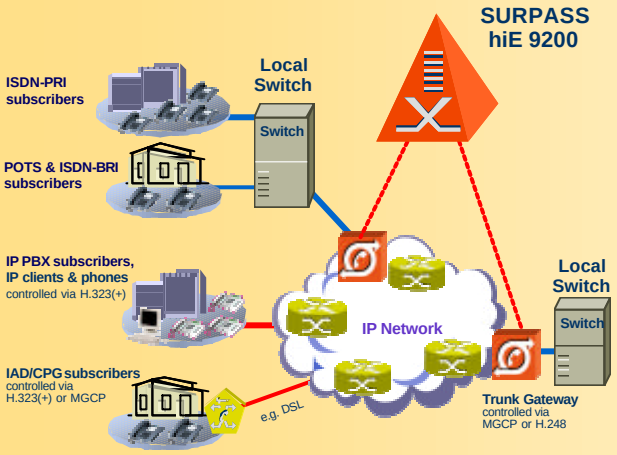

SURPASS hiE
Any switch replacement

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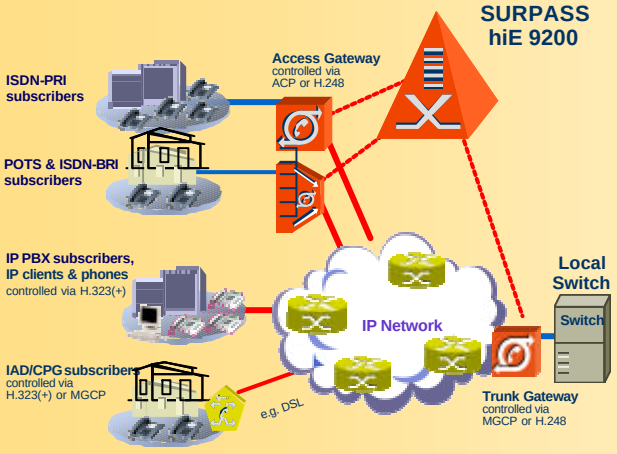

Infrastructure-driven
NGN solution

Full support of existing IP trunking solution

IP Local Access solutions to

- connect legacy subscribers to the NGN
- consolidate the network by replacing local switches

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SURPASS hiE NGN & Migration Summary

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SURPASS hiE 9200 is

- the evolution of EWSD - the most successful TDM Switching System
- the migration switch for existing EWSD networks
  ……with a step-by-step approach to full NGN
- 100% TDM plus 100% IP
- the leading-edge product to provide NGN
  .....with the complete TDM feature set
- the carrier grade solution for Trunking, Local Access and Applications
  ……on one platform for TDM and NGN
- stands for maximum protection of TDM investments and short term RoI

SURPASS hiE NGN & Migration Conclusion

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The Siemens vision of the telecommunication networks of the future is ……..

…….. an all IP-based Next Generation Network…

…SURPASS hiE 9200 paves the road to get there !

Thank you……..

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…for your attention!