# Agenda

<table>
<thead>
<tr>
<th>TIME</th>
<th>TOPICS</th>
<th>PRESENTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:00 – 13:15</td>
<td>Opening Remarks and Introductions</td>
<td>Benoît Long, Chair, Wade Daley, Vice-Chair</td>
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<tr>
<td>13:25 – 14:30</td>
<td>Converged Communications Presentation</td>
<td>Michel Fortin, DG Telecom Transformation</td>
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<td></td>
<td>- Background</td>
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<td>- Current State</td>
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<td>- Requirements</td>
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<td>- End State</td>
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<td>- Challenges</td>
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<td>14:30 – 14:40</td>
<td>Health Break</td>
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<td>14:40 – 15:50</td>
<td>Converged Communications Discussion</td>
<td>All</td>
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<td>15:50 – 16:00</td>
<td>Closing Remarks and Next Meeting (May 3)</td>
<td>Chair</td>
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Conceptual End State

**Security**
- All departments share one enterprise/common zone
- Access to sensitive departmental data is secured through restricted zones
- Developers do not have access to production infrastructure
- Classified information below Top Secret
- Consolidated, controlled, secure perimeters
- Balance security and consolidation
- Certified and Accredited infrastructure

**Characteristics**
- Integrated (single, common, secure GC network will link all service delivery points)
- High performance
- Secure
- Cost-effective
- Standardized (based on open standards, modularized design)
- Mobile (wireless technology will be maximized where cost-effective)
- Responsive and resilient

**Consolidation Principles**
1. As few wide area networks as possible
2. All departments share network access in multi-tenant buildings
3. Network equipment is shared
4. Telecom hubs (call managers, VC bridges) located in enterprise data centres or common points of presence
5. Inter-data centre connections should be diverse and fully redundant
6. Scalable and flexible infrastructure
7. Performance levels should be similar wherever possible
8. Contracts/services will be consolidated

**Business Intent**
- Business to Government
- Government to Government
- Citizens to Government
Telecommunications Services End State

Converged Networks and Unified Capabilities

- Video
- Data
- Contact Centres
- Conferencing

Enterprise Network Convergence

GC Unified Capabilities

Enhance capabilities of partner departments to better serve Canadians
Landscape of Services

Directory Services
- Identity Mgmt
- Authentication Services
- Public Certificates
- ICAM Element
- Account Provisioning
- Address Books
- Distribution Lists
- Routing
- Aliasing

Messaging Services
- Chat
- Mobile Support

Converged Communications
- Converged Voice/Data/Video
- IP Telephony
- Instant Messaging
- Conferencing(Web/Audio/Video)
- Presence
- FAX

Email Services
- Wikis
- Blogs
- RSS
- Conferencing
- Drop-boxes
- Notification
- Calendaring
- Public Folders

Collaboration Services
- Email Archiving
- Message Search
- Public Folders
- Attachments
- Email Classification

Collaboration Services
- Content Archiving
- Records Mgmt
- Enterprise Library
- Enterprise Search
- Data De-Duplication
- Tiered Storage

Enterprise Content Management and Storage Services
Converged Communications - Components

CC User

Can be on different devices (PC, Mobile, Tablet,…)

CC Client

IP network

IP Telephony
Instant Messaging
Email & Calendaring
Videoconferencing (VC)
Web Conferencing
Presence
FAX
Directory

Data Centre

CC Core Services
GC Converged Communications - Current State

- Silos of implementation for various services
  - Internet Protocol (IP) telephony, VC, conferencing, email, etc.
  - Disjointed deployments using various models (eg. fully outsourced to fully insourced).
  - Multiple vendor and vintage implementations currently implemented (eg. total IP telephony ~10,000).

- No integrated enterprise approach and support infrastructure
  - Network, identity credential access management, active directory, etc.

- Desktop/device impacts and Shared Services Canada mandate
GC Converged Communications - End State

- Single Government of Canada (GC) network capable of carrying all services with consistent functionality to all users.

- Single simplified sign-on to all authorized converged communication (CC) functionality based on a single GC directory and credential.

- Single presence store for all GC users.

- Single non-proprietary standards based platform for all converged communications services.
GC Converged Communications –
Enterprise Requirements

- Available anytime, on any device, from anywhere.
- Device independent look and feel.
- Intuitive, simple user-interface that is presence and directory enabled.
- Secure up to a Secret level of sensitivity.
- Supports government to government (G2G), government to business (G2B) and government to public (G2P) multi-modal communications.

Have we captured all key requirements?
Converged Communications: Conceptual End State

- Voice/video services mostly wireless with high definition quality when inside building
- Wireless phones will work dual-mode (wireless & cellular)
- Voice and video will be transmitted over a converged network and use similar/same infrastructure

![Diagram showing converged communications network, including IP soft phone, SIP trunk line, and public switched telephone network](Diag.png)
Key Challenges

- Collaboration services not in scope (i.e. not unified communications)
- Email and calendaring being implemented separately
  - May be challenging to integrate with the other services
- Pockets of IP telephony and UC-base already installed
  - Multiple departmental implementations
- Leveraging existing multi-vendor VC infrastructure
  - Interoperability limited between vendors
- Foundational services still in departmental silos (e.g. active directories, identity credential access management, etc)
- Multi-network environment for the next few years
Deployment Model - Considerations

Cloud Computing
- Similar to Hosted – however provided with cloud attributes (elasticity, scale, on-demand)
- Broader access for mobility (internal / external stakeholders)
- Integration of various providers in the cloud
- Aligned to single providers for all CC services
- Market maturity and security concerns

Hosted Service
- Less capital required
- Higher monthly recurring charges
- Reduced Management costs
- Evergreen costs reduced
- Cross platform integration risk

Supplier Managed
- More capital costs to acquire products (s/w, h/w, tools)
- Lower monthly recurring charges
- Need to analyze balance of responsibilities and costs across GC and Supplier resources
- Retain strategic functions (architecture, product suites...)
- Build in platform ever greening to avoid spikes in budget

Custom Solutions
- Capital costs similar to above
- Lower monthly recurring charges
- Highest Human Resources and Professional Services costs
- GC responsibilities greater in all aspects of service delivery and service support
- Build in platform ever greening to avoid spikes in budget
Potential Deployment Models

- Single provider
- Transport and services
- Transport single provider
- Services multi-provider
- Regional integration of Transport and services
- Transport multi-provider
- Services multi-provider
Questions for Discussion

• Are software-based solutions ready to replace hardware-based solutions?
• How do we implement video-conferencing in a multi-vendor environment and integrate with converged communications?
• What considerations should we have to end to end Quality of Service (QoS), latency, and inter-provider integration? Local area network (LAN) and wide-area network (WAN) considerations?
• Is this marketplace mature? Are adequate standards in place for interoperability and competition?
Next Steps

- Follow-up phone call with individuals (over the next few weeks)
- Next meeting (May 3) – Input/recommendations from subject matter experts
- Final meeting on converged communications (June 3) – Presentation of proposed architecture/way ahead
Additional Materials and Questions
# Telecom Vision: From – To Perspective

<table>
<thead>
<tr>
<th>Key Components</th>
<th>Elements</th>
<th>FROM</th>
<th>TO (TBC)</th>
</tr>
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<tbody>
<tr>
<td>**Inter-building</td>
<td>Number of Wide Area Networks</td>
<td>•50</td>
<td>Single, fully virtualized MPLS network</td>
</tr>
<tr>
<td>Networks</td>
<td>Number of WAN Connections to Buildings</td>
<td>•7121 connections to 4719 sites 1490 connections in 494 multi-tenant buildings</td>
<td>-20% in connections Building SLAs and targeted redundancy</td>
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<tr>
<td>**Intra-building</td>
<td>Number of Network Devices (LAN switches, routers, firewall/UTM devices) and wired LANs</td>
<td>•75, 000+ network devices; 25,750 LAN switches and adding 25% for DND •Cabling •Approximately 3000 orders</td>
<td>-10%+</td>
</tr>
<tr>
<td>Networks</td>
<td>Number of Buildings with Wireless LAN Services</td>
<td>•&lt; 100</td>
<td>&gt;3000</td>
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<td></td>
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</tr>
<tr>
<td><strong>Internet</strong></td>
<td>Number of Corporate Internet Connections</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Number of Regional/Local Connections</td>
<td>&gt;3000</td>
<td>-50%</td>
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## Telecom Vision: From – To Perspective

For Illustration Purposes Only

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<th>Elements</th>
<th>FROM* (TBC)</th>
<th>TO (TBC)</th>
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<tbody>
<tr>
<td><strong>Telephony</strong></td>
<td>Voice Services</td>
<td>• 608,569 lines</td>
<td>TBD</td>
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<td></td>
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<td>• 295,000 Centrex lines; 152,020 PBX lines</td>
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<td></td>
<td></td>
<td>• 10,246 VoIP lines</td>
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<td></td>
<td>• 5,722 Secure phones</td>
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<td>• 53,719 Cell phones; 78,195 BlackBerry</td>
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<td></td>
<td></td>
<td>• 15,135 modems</td>
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<td></td>
<td>• 4264 Satellite phones</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of PBXs and key systems</td>
<td>• 1082</td>
<td>&lt; 100</td>
</tr>
<tr>
<td></td>
<td>Number of IP phones deployed</td>
<td>• &lt; 10,000</td>
<td>&gt;300,000</td>
</tr>
<tr>
<td><strong>Videoconferencing</strong></td>
<td>Number of VC Boardroom endpoints</td>
<td>• 3079 VC Endpoints; 86 VC Bridges; 6348 Desktop systems</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Contact Centres</strong></td>
<td>Number of contact centres</td>
<td>• 250+</td>
<td>-50%+</td>
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Additional Questions

- **Voice over Internet Protocol (VoIP) Telephony**
  - Mobility - Business running IP telephony over wireless LAN?
  - WebRTC (real-time communications) – can it integrate with enterprise communications solutions and the PSTN?
  - Should SSC consider phasing out most desktop (hard) phones?

- **Videoconferencing**
  - Can video managed services leverage SSC’s future enterprise network?
  - Does cloud-based VC make sense for GC? Are there security issues with cloud-based VC services?
  - Is WebRTC the future of desktop video or are there other emerging technologies?
Additional Questions Continued

- Network Required To Support Converged Communications
  - Bandwidth requirements?
  - SIP trunks - recommended with IP telephony/converged networks?
    - SIP trunking maturity? Who’s offering what?
    - How interoperable is SIP trunking?

- Future of Desktop Communications and Collaboration Services
  - At what point will desktop communications and collaboration services be completely ubiquitous from an end-user perspective?