



Agenda Item 3: Specific Air Navigation Activities and Developments
3.6 Communications, Navigation and Surveillance (CNS)

CABLE & WIRELESS (WEST INDIES) LIMITED (C&W)
FRAME RELAY PROPOSAL FOR E/CAR AFS DIGITAL NETWORK

(Presented by InterCaribbean Aeronautical Communications Limited (IACL))

SUMMARY

This Information Paper presents relevant details of Frame Relay proposal from Cable & Wireless (West Indies) Limited for the Eastern Caribbean Digital AFS Network.

References:

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| <ul style="list-style-type: none">• Agenda Item 4 of the 26th E/CAR IWG Report |
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1. Introduction

1.1 The E/CAR States have tasked IACL to coordinate the development of the Digital AFS Network for this sub-region. The installed system has not functioned in accordance with expectations but, however, efforts are ongoing to ensure its proper and reliable functioning.

1.2 In the interim C&W is committed to the takeover from Telecommunications Services of Trinidad & Tobago (TSTT) and to take all reasonable steps to provide the level and quality of service required.

1.3 C&W, as part of its effort as pointed out in the preceding paragraph, has considered the introduction of Frame Relay. Why is it necessary to change to Frame Relay? As you may be aware, X.25 is approaching its end-life, being superseded by the more scaleable Frame Relay Service. On 31st March 2002 Cable & Wireless's Global X.25 service commenced a phase out of operational service for completion during the fiscal year 2002/2003. This impacts IACL and some airlines, and all customers presently using X.25 have been advised of this change. However it is to be noted that within the Caribbean, X.25 service will continue to be available with certain mandatory Sales Rules. Therefore, C & W will continue to work closely with IACL to ensure a smooth transition from our current legacy X.25 network.

2. Discussion

2.1 Cable & Wireless Frame Relay is a world-wide managed service designed to handle fluctuating volumes of traffic efficiently, securely and cost-effectively, making it ideal for connecting local area networks (LANs), which require both voice and data connectivity.

2.2 Cable & Wireless Frame Relay is an international, end-to-end, managed data networking service carrying data at rates of up to 45 Mbit/s. It is ideal for interconnecting the various airport stations designed to handle 'bursty' or fluctuating traffic patterns generated by Air Traffic Control sending electronic messages over a secure and reliable AFTN network. Among the types of messages that will be exchanged over this Frame Relay Network are: flight plans, movement messages, ATC coordination, NOTAM's, weather, and aeronautical information. It can carry voice traffic, and also supports client-server applications.

2.3 Each site needs just one connection to the Cable & Wireless Data Network instead of a connection to every other LAN or airport station -- the network provides all the interconnections, minimizing equipment and connection charges. The service is available in numerous places around the world, via fixed links of between 56 kbit/s and 45 Mbit/s, depending on location.

2.4 Cable & Wireless Frame Relay is an ideal solution for any ATS Unit wishing to connect LANs over the wide area and to transmit diverse traffic types, with fluctuating periods of high and low bandwidth demand, across a single, integrated network. Applications of Cable & Wireless Frame Relay include the interchange of high volume; low bandwidth 'bursty' traffic like electronic messages, Internet access, voice traffic, file sharing and transfer, transmission of images etc.

2.5 Data is exchanged between sites via permanent virtual connections (PVCs) pathways through the network between each site. Just one connection to the network allows a site permanent connection to a number of others. Cable & Wireless agrees to a sustained throughput of data known as the committed information rate (CIR). The extended information rate (EIR) for each PVC is the amount of data that will be delivered if demand 'bursts' above the limit established by the CIR, as long as network capacity is available.

2.6 Access speeds of up to 45 Mbit/s are available, PVCs are ready to go without call set-up and throughput is high to accommodate bandwidth-hungry applications. { and minimal overheads} PVCs automatically use alternative routes through the network if one route is disrupted. Cable & Wireless Frame Relay is a very resilient service, which is why C & W can guarantee a high, minimum standard, end-to-end availability as part of a Service Level Agreement with you. For added reliability, three back-up options are available, diverse access bearers, ISDN line back-up, and backup PVCs.

2.7 The Cable & Wireless global network of Service Management Centers supports Cable & Wireless Frame Relay 24 hours a day, 365 days a year, backed up by Network Management Centre in Barbados.

2.8 Cable & Wireless Frame Relay is designed to meet any future requirements of the E/CAR. It can carry Internet Protocol (IP) easily. Cable & Wireless Frame Relay allows the functionality of IP across a reliable, global network, and offers a natural migration path for the future. Connections can also be migrated easily to ATM and, with the aid of Cable & Wireless Frame-to-ATM interworking, Cable & Wireless ATM and Cable & Wireless Frame Relay sites can be seamlessly linked across the same network as and when your business requires it.

2.9 Adding or removing circuits is easy. PVCs can be reconfigured quickly and asymmetrical connections can be set up. The bandwidths are not fixed -- when necessary, an individual PVC can burst above its CIR (provided the connection has sufficient unused bandwidth).

2.10 Over subscription allows the aggregate CIR for PVCs to be up to twice the bandwidth of your service connection. This option can offer very cost-effective solutions, where different applications are known to require bandwidth at different times of the day and night, effectively increasing the number of PVCs over a connection without upgrading it. Sites can be connected using point-to-point, star, mesh or partial mesh configurations.

2.11 In summary, some of the main features of Cable & Wireless' Frame Relay Service are:

- An end-to-end managed network providing consistent functionality worldwide.
- Guaranteed service availability of 99.95% (including local loop and customer CSU/DSU).
- A maximum end-to-end round trip delay of 280 milliseconds.
- A consistent level of service extended to all sites, allowing the service to be expanded throughout the world without an increase in support costs.
- Router monitoring, management and fault resolution around the clock to ensure the highest level of solution performance and availability.
- Reduced network equipment capital costs.
- Worry-free maintenance.
- Access to router and network experts 24/7 around the world.
- A one stop shop arrangement whereby ATC Units have to interface with only one supplier.

3. Suggested Action

3.1 The meeting is requested to note the details provided in the Information Paper and suggest amendments to improve the proposal by Cable & Wireless (West Indies) Limited.