RAD Multiplexers Transmit Critical Radar Traffic Between Liverpool’s John Lennon Airport and Robin Hood Doncaster Sheffield Airport

3rd November 2008: In a notable example of the transmission of air traffic control (ATC) data, a telecommunications access solution from RAD Data Communications has been deployed in Great Britain to put the radar at Yorkshire’s Robin Hood Airport Doncaster Sheffield on the screens of air traffic controllers sitting some eighty miles away at Liverpool John Lennon Airport.

The United Kingdom’s main en-route ATC service provider, NATS, based at Swanwick or Manchester, hands over control of aircraft inbound into Robin Hood Doncaster to the approach control unit of the destination airport when it is about 40 nautical miles away. In this case Liverpool John Lennon Airport – despite being located nowhere near the aircraft’s destination – now supply the approach control service to Robin Hood Airport using critical radar and related time-sensitive data transmitted over a dedicated Wide Area Network (WAN) that runs between the two locations over two E1 leased lines. This process realises significant savings in infrastructure and manning overheads without any detriment to safety.

When Peel Airports Group, the owners of both airports, were required to upgrade the radar and communication services due to a programmed airspace change, they turned to Cyrrus Ltd, a leading UK independent consultancy that focuses on bringing creative, imaginative solutions to the challenges facing the airport and air traffic industries.

Having determined the technical requirement and created the system design, Cyrrus approached Cambridgeshire-based Magdalene Ltd for a solution to meet the operational requirement. Magdalene then selected and developed the RAD Megaplex-2100 solution to meet the need, which enabled Cyrrus to recommend that Peel Airports Group deploy these multiplexers at each end of each E1 line. The RAD equipment was then supplied by Magdalene, who utilised their marshalling, integration and test-bed facilities to build and

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configure the products prior to site deployment, and were also on hand to assist Cyrrus with the commissioning of the solution.

**Complex Applications Accommodated by Network Architecture**
Apart from radar hardware changes, the project also entailed frequency allocation alterations together with new ATC operational procedures. Among the many complex applications that have to be accommodated by the architecture are full redundant path switchover, G.703 co-directional 64 kbps channels, PCM voice, radar data, and Ethernet status monitoring, all of which have to be transported across a fault tolerant WAN network.

**Future-Proof Solution Supports Legacy and Packet Switched Transport**
“RAD was one of the few companies to support legacy protocols like G.703 co-directional 64 kbps as well as providing vital Ethernet, RS232 and voice channels,” noted Mr Richard Ingless, Director of Cyrrus. “The future-proof Megaplex-2100 is equipped with redundant ring recovery and an IP link option that will enable it to continue to be used should packet-switched IP or Ethernet transport, with a critical Service Level Agreement (SLA), become available in the future,” he continued. “Moreover, on submission of the Safety Case, approval was secured from the Civil Aviation Authority (CAA) to operate the new Megaplex-2100 based system in this safety-critical airport operation.”

RAD’s Megaplex-2100 multiplexers will also allow Robin Hood Airport to reduce their telecommunications operating expenses (Opex) by incorporating cross-site PBX traffic without having to lease additional expensive E1 links.

**Co-operation and Teamwork ensured project success**
Magdalene were pleased to assist Cyrrus and their partners in their task to design and deploy the required solution for Peel’s Robin Hood Doncaster Sheffield and Liverpool John Lennon airports. “Working to tight timescales, our solution engineering team advised Cyrrus on the initial equipment selection, our logistics department sourced the products from RAD, and our technical support engineers provided configuration, test and implementation services” stated Mr Bernard Smart, General Manager at Magdalene Ltd. “With Magdalene’s company motto ‘Our People Make The Difference’ in mind, our highly competent engineering consultants have a broad range of experience in transmission and radio systems,” Smart reflected. “They have benefited from attendance at the annual RAD partners technical workshops, resulting in official RAD accreditation for Magdalene to provide training courses to its customers,” he added. “Utilising our 24/7 Network Operations Centre, we are able to provide long-term support services to ensure operation and availability of this critical communications solution.”

Cyrrus also called on the assistance of Northstar Business Solutions Ltd, another of their working partners, to support the project. “Cyrrus maintains close contact with a number of trusted partnership companies that work well together and we augment each other’s

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core competence to ensure that we deliver value for money projects on time,” concluded Ingless, who formerly served as a radar system design authority at Raytheon.

About RAD
Established in 1981, privately owned RAD Data Communications has achieved international recognition as a major manufacturer of high quality access equipment for data communications and telecommunications applications. These solutions serve the data and voice access requirements of service providers, incumbent and new carriers, and enterprise networks, by reducing infrastructure investment costs while boosting competitiveness and profitability. The company's installed base exceeds 10,000,000 units and includes more than 150 carriers and operators around the world. These customers are supported by 21 RAD offices and more than 300 channel partners in 164 countries.

RAD is a member of the RAD Group of companies, a world leader in networking and internetworking product solutions.

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