IBM Corporation 2455 South Road Poughkeepsie, New York 12601 December 19, 2003

IBM® GDPS® Application support of the ADVA FSP (Fiber Service Platform) 2000 Dense Wavelength Division Multiplexing (DWDM) System

International Business Machines Corporation and ADVA Optical Networking have successfully completed application qualification of the ADVA FSP 2000 Release 5.6 DWDM system in the following IBM Parallel Sysplex® and Geographically Dispersed Parallel Sysplex™ (GDPS), IBM System/390® and eServer™ zSeries® environments:

- GDPS / "Peer-to-Peer Remote Copy" (PPRC) / ESCON®, synchronous copy solutions, up to a maximum supported IBM 9037 Sysplex Timer® application distance of 40 km.
- GDPS / PPRC / Fibre Channel, synchronous copy solutions, up to a maximum supported IBM 9037 Sysplex Timer application distance of 40 km.
- GDPS / "Extended Remote Copy" (XRC) / FICON®, asynchronous copy solutions, up to a maximum supported application distance of 100km

Qualification Results Summary:

The ADVA FSP 2000 DWDM System met IBM Qualification criteria for support of the following IBM eServer zSeries GDPS Application Solution protocols:

- IBM 9037 Sysplex Timer® ETR and CLO links
- FICON® (1 Gbps) Single mode / Multimode fiber
- FICON Express (2 Gbps) Single mode / Multimode fiber
- ESCON® Multimode / Single mode fiber
- ISC-1 (1 Gbps.) Single mode fiber
- ISC-2 / HiPerLink (1 Gbps.) Single mode fiber
- ISC-3 S/390 and zSeries "Compatibility Mode" 1 Gbps (Single Mode fiber)
- ISC-3 zSeries "Peer Mode" 2 Gbps (Single Mode fiber)

Specific ADVA DWDM product hardware and software release levels used during the testing evaluation follow:

- ADVA FSP 2000, DWDM System SW Release 5.6
- ADVA Optical Amplifier EDFA-C v.1.01
- ADVA Channel Modules: WCM/LS-T-1310 v.1.03, WCM-PL/2.5 Gbps.-MC2G v.1.01, WCM/HS-CL-1310L v.1.05 2TCM-PL/HS-MCHS v.1.01, 4TCM/LS-MCLS-1310L v.1.04, 8TCM/LS-FC200-1310L v.1.06
- ADVA Optical Protection Modules: RSM-SFW v.1.04 Single Fiber Remote Switch, RSM-OSC/OLM Dual Fiber Optical Line monitoring Switch

GDPS / PPRC Application Limitations:

The following considerations and limitations apply to GDPS / PPRC application configurations:

- IBM GDPS / PPRC application support is limited to ADVA FSP 2000 DWDM Systems utilizing Client protection mode only for IBM 9037 Sysplex Timer protocol signals. In addition, ADVA single fiber switch "RSM-SFW" and ADVA Dual fiber switch "RSM-OSC/OLM" module features may be used for protection of other protocols.
- The ADVA FSP 2000 "Single-fiber " option feature is supported for IBM GDPS applications provided the above ADVA Client protection mode and switching protection feature protocol limitations are adhered to.

ADVA (EDFA) optical amplifiers may be required to meet link budget or power level requirements for extended distance applications. The following limitations apply if optical amplifiers are utilized in the DWDM network:

- ADVA EDFA Optical amplifiers cannot be used in GDPS network applications for IBM ISC-1, ISC-2 and ISC-3 "Compatibility Mode" protocols.
- If ADVA EDFA Optical amplifiers are utilized in IBM GDPS 9037 Sysplex Timer applications for ETR protocols, the ADVA "Automatic Laser Shutoff" feature must be disabled or additional non-ETR protocols must be used in the EDFA in conjunction with ETR protocol signal.

ADVA Optical Networking DWDM product compliance to product specifications, safety, regulatory agencies, industry Standards and truth in advertising is the sole responsibility of ADVA Optical Networking.

The terms eServer, ESCON, FICON, GDPS, Geographically Dispersed Parallel Sysplex, IBM, Parallel Sysplex, System/390, Sysplex Timer and zSeries are trademarks or registered trademarks of International Business Machines Corporation.

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