Network Communication Protocols TCP/IP Sun NFS **Storage Area Network** X.25 IS0 **Protocol Suites** Network **DECnet V** IBM **Application Layer** · Top end-user layer. • Provides appropriate semantics or 3G UMTS W-CDMA RSHELL Remote Unix Shell RLOGIN Remote Unix Login ND Sun Network Disl meaning to transferred data. · Provides for setup and termination processes. transfer and manipulation services. ommon Internet File System / Server Message Block TOPS Third end-user layer. Manages and transfers end-user Isolates application layer processes from differences in data PDCP Packet Data Convergence Protocol RTCP-XR RTCP Extended Repo · Second of four end-user function layers. · Controls establishment and termination of sessions between two end users. Manages session to ensure orderly delivery Transport Layer · Lowest of the higher-layer protocols · Utilizes network layer to ensure reliabl sequenced data exchange between end IP/IP-SEC **3G Lucent Wireless** · Can be connection or connectionless (datagram) oriented. may arrive out of sequence. 2G Motorola Wireless · Segments messages into smaller units **Network Layer** RTMP Routing Table Maintenance Protocol Last Network Services layer. UMTS/GSM WIRELESS GPRS Data units are called packets. Uses data link layer to ensure error free delivery of data. Uses unique source and destination through the internetwork. 802.1s MST Multiple Spanning Tr · Provides flow and congestion control to prevent network resource (buffers, transmission links, etc.) **802.1w RST** Rapid Spanning Tree MFR Multilink Frame Rela FRF.16.1 MLP (X.25) Internetwork LLC 802.2 Data Link Layer · Second Network Services layer. · Blocks of data are called frames. Ensures reliable and error-free adjacent network nodes. · Links may be physical, e.g. point-totwo nodes on a multi-access LAN. · Concerned with bit synchronization **VoFR** Voice Over Frame Relay detection and correction of bit · Frames are composed of networ layer packets and control Ethernet DIX V2 · Control information may be in the LAPD Link Access Proced Channel form of headers or trailers. IEEE 802.1p · Control information allows the receiving node to perform synchronization and error detection. V, E, T Series Frame Relay **ATM CDPD** ISDN P₀S HDLC IEEE 802.1Q • First of three Network Services E3 PLCP 34.368 Mbps · Concerned with the physical transmission of data bits. · Specific to the media, e.g. optical, STM-1 STM-4 STM-16 OC-3 OC-12 OC-48 155.52 Mbps 622 Mbps 2.488 Gbps DS1 PLCP 1.544 Mbps copper, coax, RF, twisted pair, etc Specifies data signal encoding and specifications and pin outs. E1 PLCP 2.048 Mbps · Ensures that a bit entering at one end of the transmission media reaches the other end. **Get Beyond the Protocol** Contact one of the following centers, for additional Test and Measurement product information www.agilent.com **Agilent Technologies** www.agilent.com/find/dna document subject to change without notice © Agilent Technologies, Inc. Printed in USA July 1, 2006 +45 70 13 15 15

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