SpaceWire Network Management Using RMAP

Takahiro Yamada (JAXA/ISAS)

18 February 2009

Twelfth SpaceWire Working Group Meeting

ESTEC, Netherlands

Purpose of This Presentation

❖ The purpose of this presentation is to propose a standard method for performing network management using RMAP, which should eventually be published as an optional Annex of every SpaceWire-related standard.

Network Management in Internet

❖ Information to be used to manage (i.e., control and/or monitor) implementations of a protocol is stored, in each implementation, in a database called the Management Information Base (MIB). Every Internet protocol specifies the format of the MIB to be used for management of implementations of that protocol.

❖ The network manager performs management of implementations of a protocol by reading contents of the MIB of the implementations and setting values to the contents of the MIB. To do this, the Internet has a protocol called the Simple Network Management Protocol (SNMP), which can be used for managing any protocol.

Network Management for SpaceWire

❖ The SpaceWire RMAP provides functions very similar to those provided by SNMP (i.e., reading the value of a parameter and setting a value to a parameter). Therefore, we can use RMAP for network management (as well as for Plug and Play).

❖ However, we still need to define a MIB for each SpaceWire protocol, or for each portion of a SpaceWire protocol (for example, routing tables). The MIB definition should be published as an optional Annex of every SpaceWire-related standard.