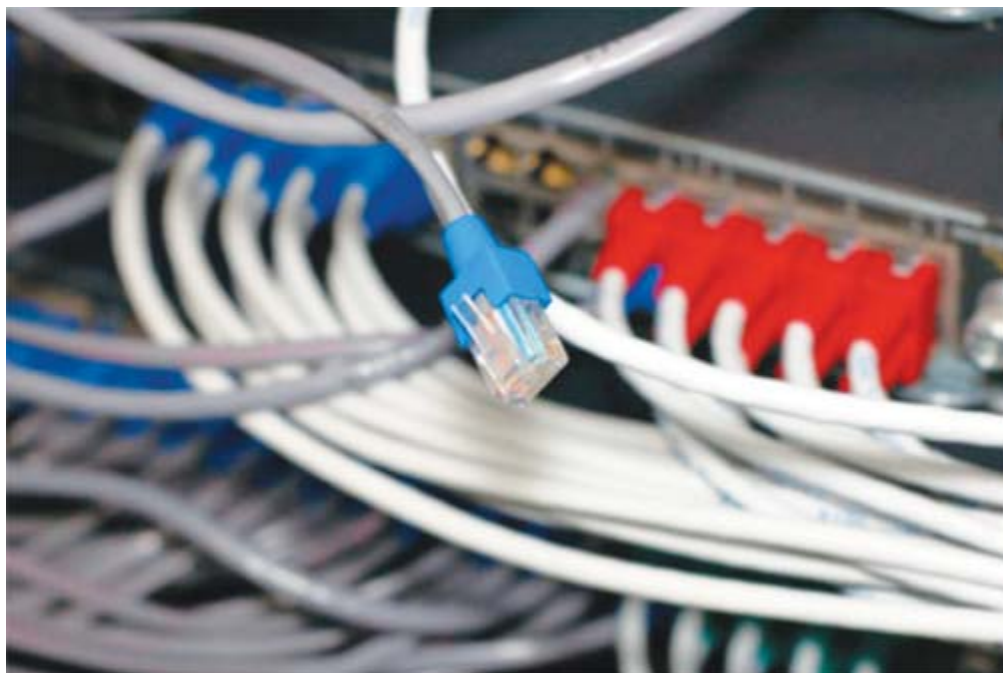


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FOCUS — Network Management, The Next Step

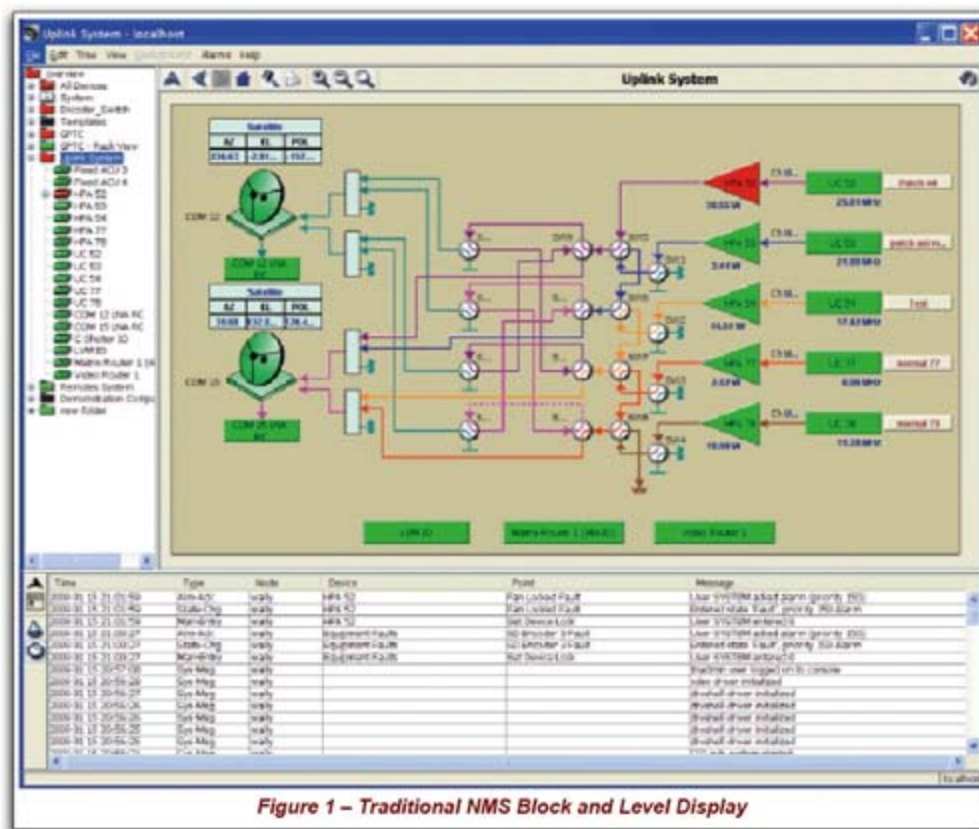


Most of the Network Management Systems (NMS) solutions on the market today evolved out of Monitor and Control (M&C) solutions. Operators at an Earth station relied on the M&C system to monitor and control one or more antennas' RF equipment without having to walk amongst the racks in order to determine if there was a failure on any piece of equipment. As network operators acquired or built out more infrastructure to meet the ever growing demand for bandwidth from their customers, M&C systems were forced to evolve into the NMS solutions on the market today.

The goal of the network management system was to provide operational efficiencies by allowing the operator at a *Network Operations Center (NOC)* to monitor and control all the equipment that comprised their transmission network, regardless of geographical location, from a single location or in some cases, a primary and a back up location.

Today, this goal has largely been realized as many network operators have the ability to manage all the equipment that comprises their network from a single Operations Center. This is accomplished from a **NMS** graphical user interface which typically consists of a map-based overview with graphical icons depicting each of the sites that make up the operators' network. These icons are colored coded to represent the status or

“health” of the equipment at the site. By drilling down into a site, the operator is presented with a block and level display for each of the antennas located at the site (*see figure 1*).



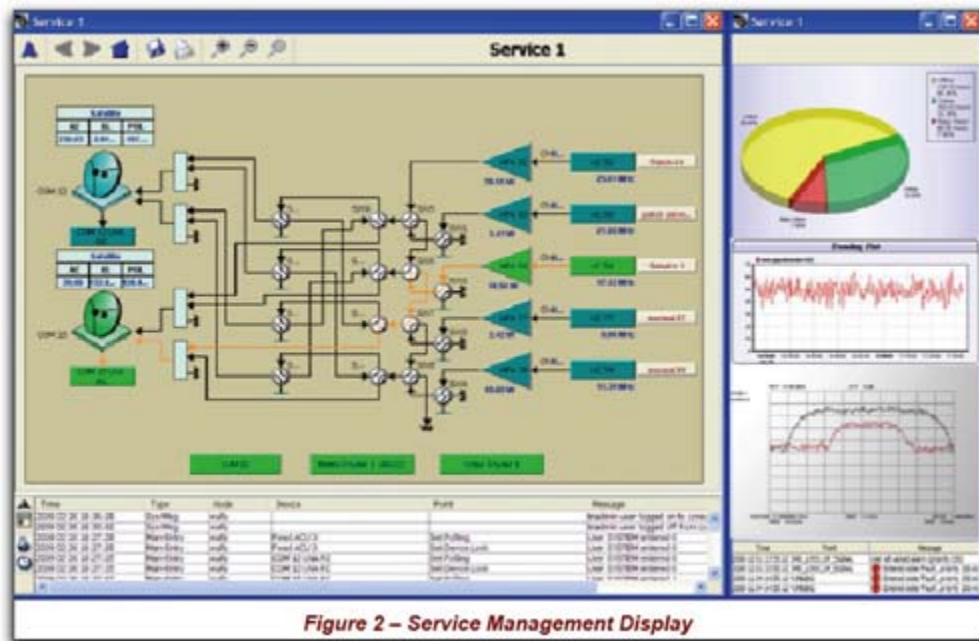
Operators are able to identify when any of the equipment fails through the use of pop-ups and changing icon colors that are displayed based upon equipment or site status. More importantly, they are able to recover from equipment failures via the NMS without having to dispatch a technician to site. In the event they cannot resolve the issue via the NMS, they can determine the most likely cause of the problem and dispatch a technician to the remote site equipped with the appropriate tools and parts to repair the issue. Not only does this make them more efficient in the operation and maintenance of the network, but it also saves significant costs in doing so.

But network operators today are faced with new challenges. Customers are demanding not only more capacity, but also higher reliability from their network providers through complex *Service Level Agreements (SLAs)*.

Today, it is not uncommon to see reliability requirements of 99.995 percent or greater on the network. This is coupled with increased competition as more network operators enter the market. Although the NMS does allow operators to recognize and recover services by alerting them to equipment failures and allowing them to correct them from the console, the NMS does very little to communicate to the operator what the *REAL* impact is of these equipment failures. The basic problem is this — the NMS is still simply managing the equipment, while the network operators are trying to manage their services in an effort to maximize the network revenue based upon the SLAs they have established with their customers.

At **Newpoint Technologies Inc.**, a wholly owned subsidiary of **Integral Systems Inc.**, we are working hard to close the gap between what the network operators require and what the current NMS solutions offer. Newpoint is introducing a new *Service Management Module* to our industry leading **Compass/TrueNorth** Network Management Solution. The *TrueNorth Service Manager* takes the NMS solution to the next level by

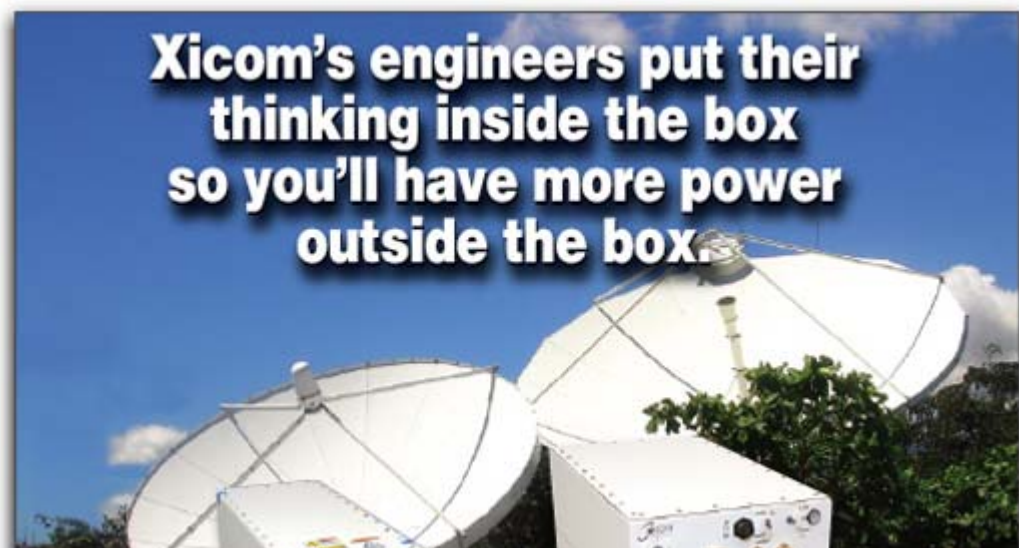
allowing operators to not only continue to view the network as they do today using the traditional block and level displays (figure 1) but also provides them views for each of the services that are running on the network. These service views provide an origination to destination view of only the specific equipment associated with the transmission of the service (*see figure 2*).



As online units fail, and standby units are activated, the service displays are automatically updated to reflect the new transmission path for the service. When there is an alarm in the system because of an equipment failure, operators are alerted to not only the fact that a piece of equipment has failed, but also to what “downstream” services are affected by the equipment failure.

By allowing operators to assign priorities to the individual services based upon the established SLAs that they have setup with their customers, operators can quickly distinguish the high revenue generating services from the low revenue generating services and elect to recover the higher priority services first, and then work on the lower priority services. In the event that the equipment failure has left the network short on capacity to carry all the services, lower priority services can be replaced with the higher priority services until spare equipment can be put in place.

To assist operators in the activation and deactivation of services, or in moving services from one transmission chain to another, profiles can be stored for each of the services which contain the parameters needed to be set in the equipment to bring the service online. To bring a service up using profiles, the



operator only has to select the equipment to be used for the service transmission, and the profile to be applied (a service could have more than one profile), and the software will execute the set up of the service by downloading the profile to the equipment and verifying the profile has taken. If an error occurs along the way, the operator is prompted and required to take action to resolve any issues.

Once the concept of services have been introduced into the

NMS, the operators are provided with powerful reporting tools which can be used to provided feedback into the SLA Management or Billing Systems. This includes detailed information on when the service was activated and deactivated over any given time frame, what alarms occurred while the service was running, and how long the service was down or degraded while it was active, etc.

Managers can have this information rolled up to a system view and see network usage statistics. For example, on average how many services were running on the network at any given time, how many services were offline due to equipment problems when they should have been active, how much spare capacity is on the network at any given time, etc.

Network Management Systems can no longer afford to be focused on only equipment failures, but must provide more information and tools to allow them to do their job even more efficiently and effectively. Operators are required to manage the services on their networks and their NMS should assist them to do just that. By introducing service management concepts into the equipment focused NMS, operators can make important decisions which minimize the revenue impact of equipment failures. Furthermore, the NMS can provide key indicators on the performance of the network and identify short comings on the network which should be addressed. The service based NMS is an essential part of managing any network.

About the author

Wally Martland is the President of Newpoint Technologies, Inc., a wholly owned subsidiary of Integral Systems, which provides Satellite Command and Control, Network Management, and Carrier Management software solutions to the satellite communications and broadcast marketplaces. Wally has over 19 years experience in providing Network Management and Remote Site Monitoring Solutions to the Satellite, Microwave, Transmitter, & SCADA marketplaces.



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