



Convergence Enabled.

ARRIS Professional Services

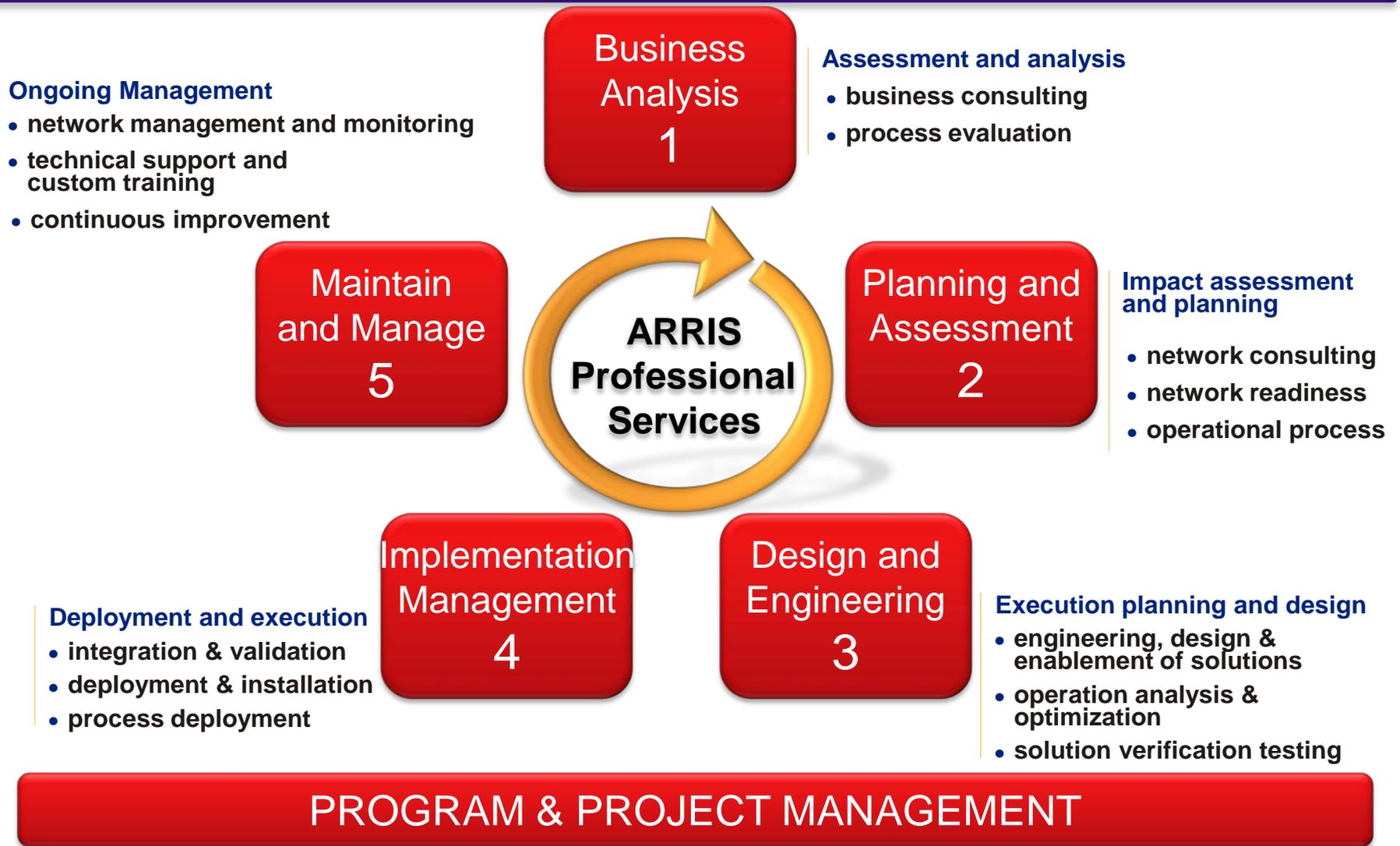
Full Service Experience. Delivered.

Presentation Agenda



- Services Overview
 - Professional Services Lifecycle
 - Business Analysis and Assessment
 - Planning and Design
 - Network Integration Services (NIS) [Inside Plant]
 - Network Design and Drafting (NDD) [Outside Plant]
 - Implementation
 - Program and Project Management
 - Deployment
 - Integration
 - Maintain and Manage
- Q & A

Professional Services Lifecycle



Business Analysis and Assessment



Business Analysis and Assessment

Maximizing Current Infrastructure and Optimizing the Future



- Business & Network Consulting
- Product Development & Deployment Planning
- Long Range Financial and Network Planning
- Capacity Audit and Modeling
- Network Optimization
- Next Generation Network Planning
- Network Applications Audit & Assessment
- DOCSIS 3.0 Planning
- Diversity Planning
- Independent Technology Evaluation
- Co-location Transport Strategy & Planning
- Process Development

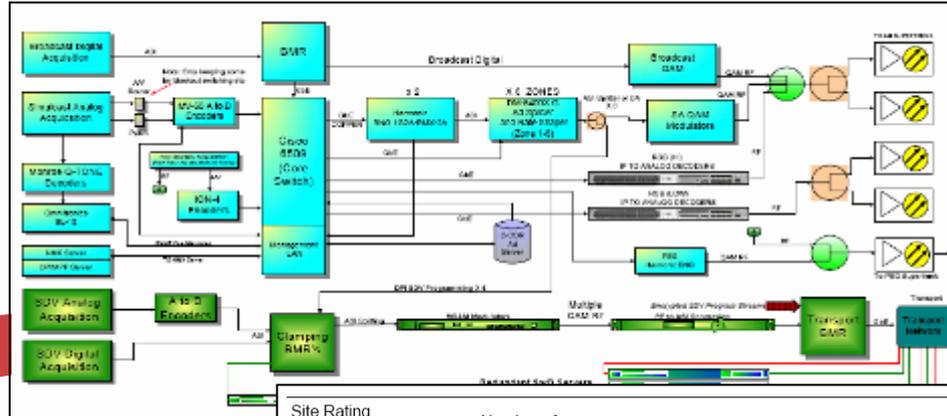
Business Analysis and Assessment

Example: Long Range Network Planning

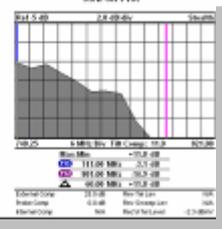


Timeline	2005	2006	2006	2007	2008	2009	2009
Programming Linear Mode	total	after SDV	adds	adds	adds	adds	total
Analog	74	74					74
SD Digital BC	175	120					120
HD Broadcaster	6	6	2				8
HD Cable Network	9	9					9
SD Simulcast	74	28					28
VOD	4	4					4
DOCSIS	1	1		1			2
Control QAMs	2	2					2
Other-Navic/Mosaic		0	0.5	0.5			1

Switched (SDV) Mode	2005	2006	2006	2007	2008	2009	2009
	total	after SDV	adds	adds	adds	adds	total
SD-SDV		101	5	5	5	5	121
HD-Broadcaster							4
HD Cable Network			4	5	12	8	29

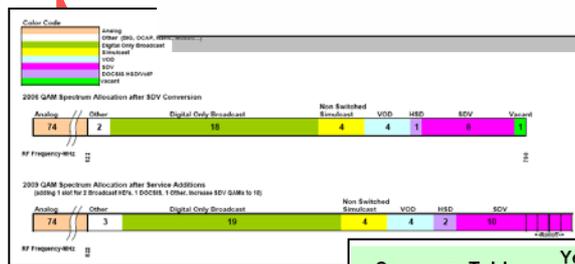


Golden Rule - No. of GHz, Active 10C	Architecture Type
Roll off in dB (750 to 900 MHz)	Clear Access - No. of GHz
800	11.8
750 MHz	37
750 MHz	35.6
705 MHz	35.1
771 MHz	35.5
777 MHz	35.1
783 MHz	35.1
789 MHz	35.2
795 MHz	34.9

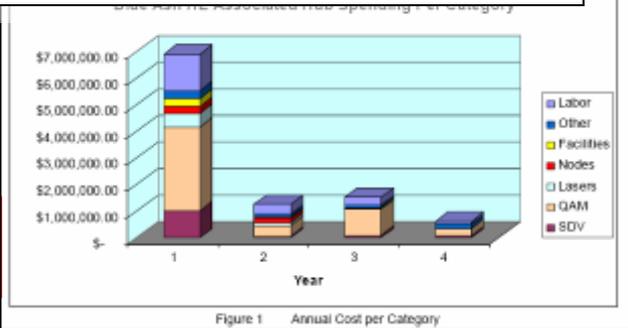


Site Rating (Building/Site Power/HVAC)	Number of sites	Comments
A / A / A	1	Ready—Ready to facilitate requirements for the sustainable network with only minor upgrades required in all three areas
A / B / A	23	Moderate Power—The most common problem in this rating is the overloading of UPS systems (near or exceeding 80% loading).
Total	24	

Table 6 Division Site Rating Breakdowns
For specific site details please see the appropriate site section

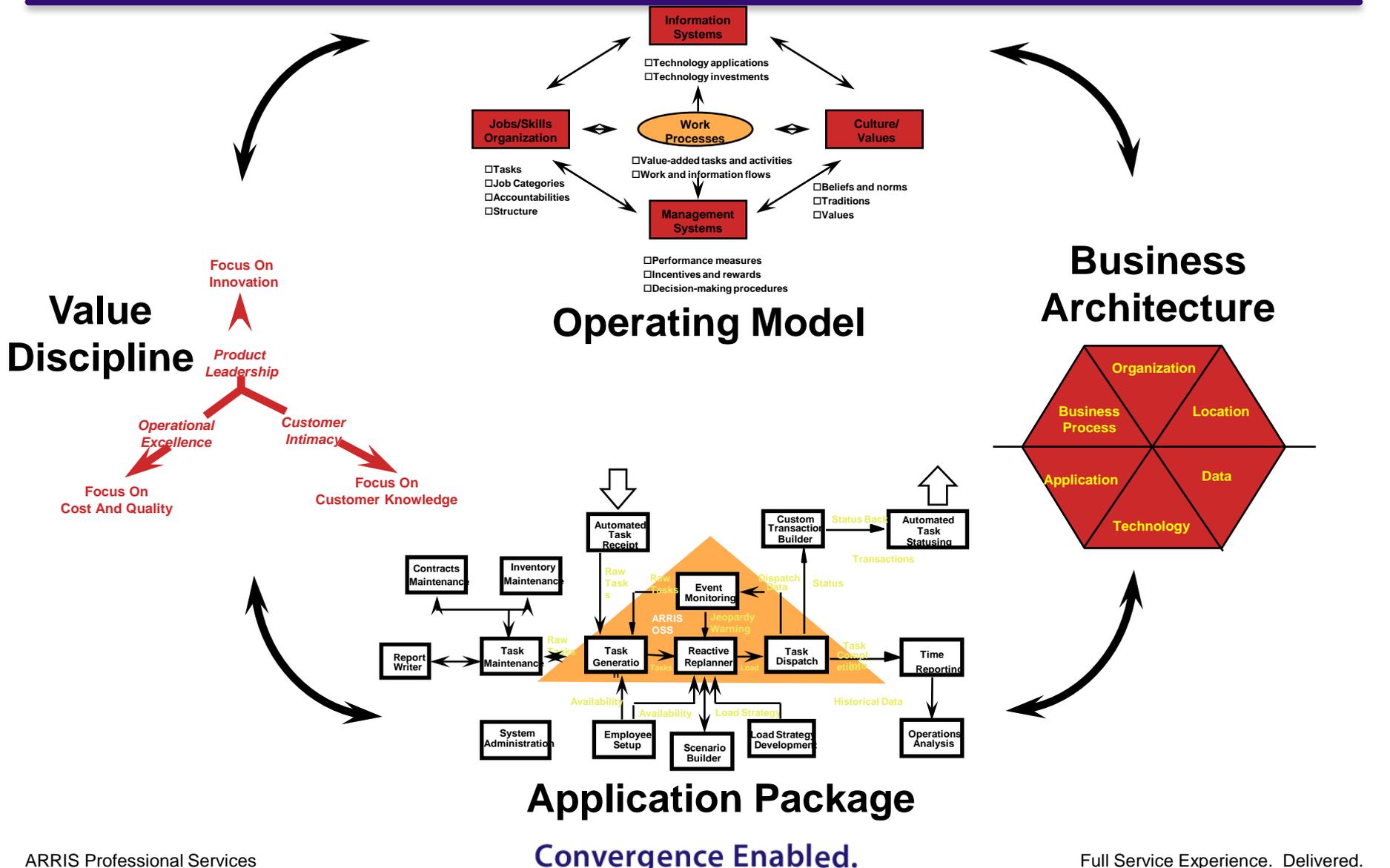


Summary Table	Year 0 2005	Year 1 2006	Year 2 2007	Year 3 2008	Year 4 2009
VOD Service Groups	13	18	22	31	43
SDV Service Groups	0	39	43	43	43
Lasers	31	39	43	43	43
Nodes	108	109	110	110	110
Homes Passed	60796	61824	62869	63933	65016



Business Analysis and Assessment

Example: Business Process Analysis





Engineering and Design Services

Network Integration Services
(Inside Plant)

Engineering and Design Services

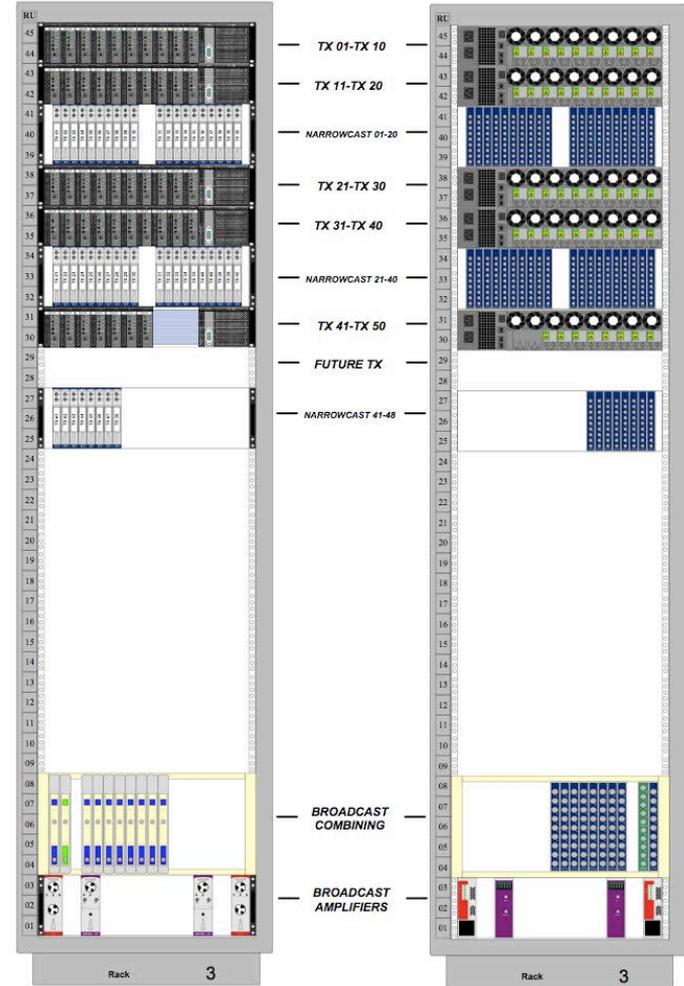
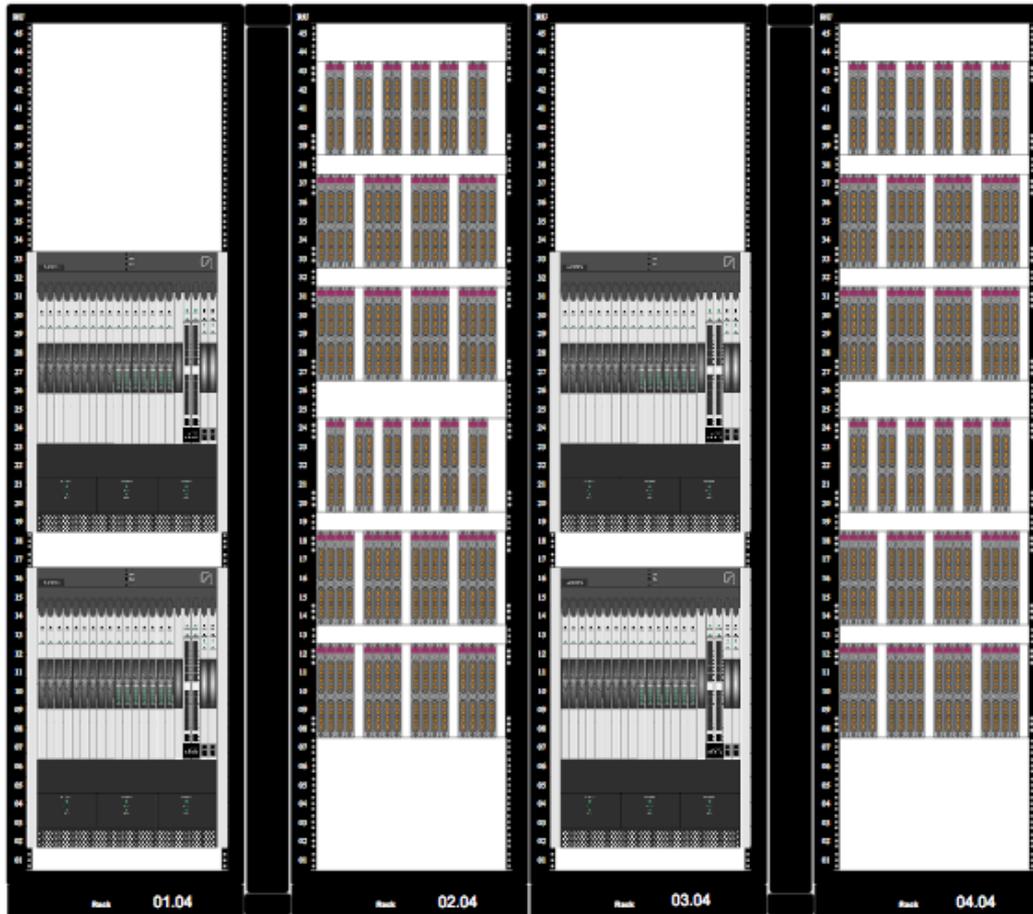
Resilient, Efficient and Optimized Solutions



- Network Design (ISP)
 - HFC/Digital/SDV/IP Video Networks
 - Narrowcast Networks
 - CMTS/DOCSIS 3.0
 - Voice (Packet & Switched)
 - SIP Engineering
 - TDM & Wavelength Networks
 - Ethernet & IP Networks
 - Enterprise LAN/WAN/MAN/SAN Solutions
 - Wireless Networks/Fixed Mobile Convergence (FMC)
 - Structured Cable Plans
 - Fiber To The X (FTTX)
- Network Infrastructure Design (Headends/COs/MDUs)
- Operations Architecture Design
- Backbone & Backhaul Network Design

Engineering and Design Services

Example: Rack Elevations and Space Planning

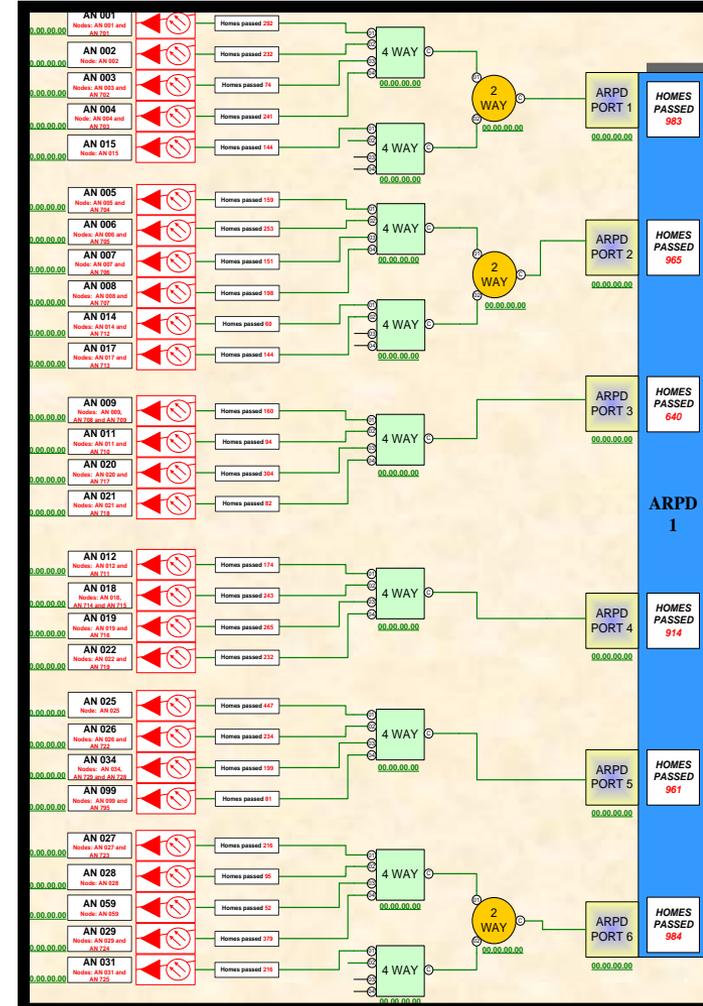
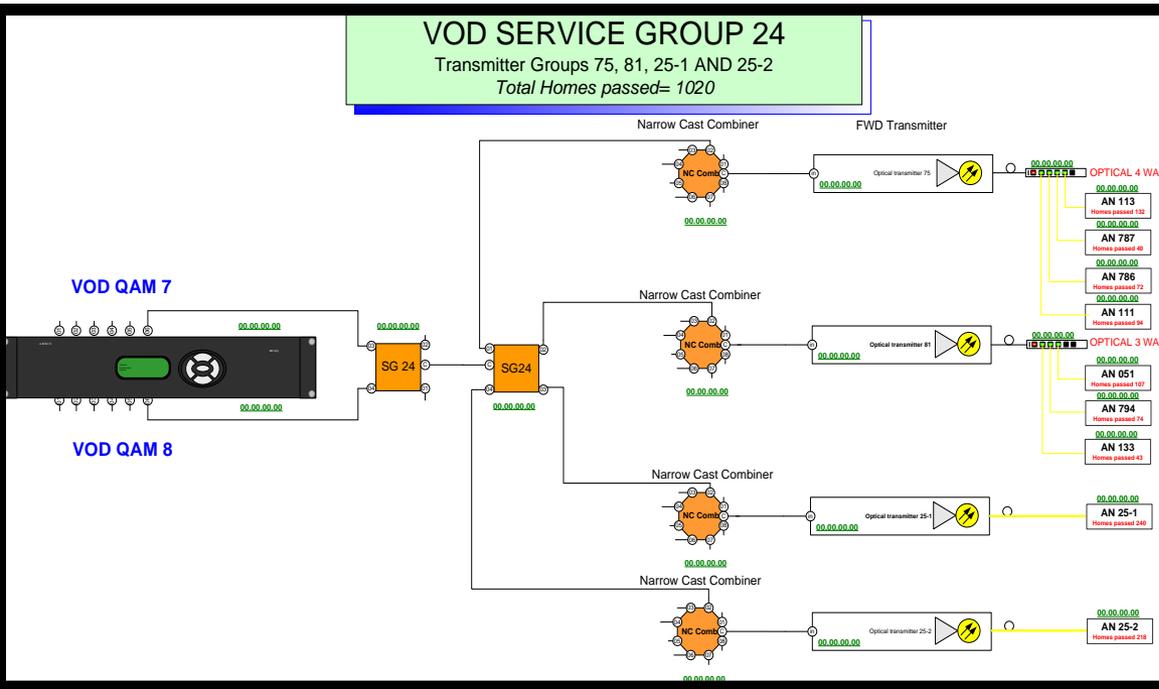


FRONT VIEW

REAR VIEW

Engineering and Design Services

Example: Schematics and Service Group Engineering





Engineering and Design Services

Network Design and Drafting
(Outside Plant)

Network Design and Drafting

Supporting Network Current and Future Infrastructure



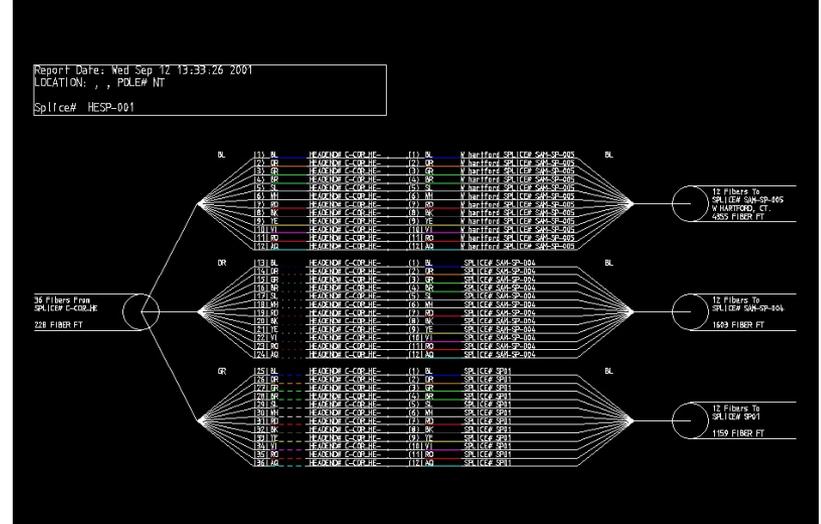
- Network Planning and System Migration.
 - Pre-Engineering Sample Design
- Field Survey and Fiber Audit Services
 - Commercial Services Walkout
 - Right of Entry (ROE) and Multi-Dwelling Unit (MDU) Survey.
- Production Fiber/RF Design and Drafting.
 - System Bandwidth Upgrades
 - Node Segmentations and Splits
 - Business As Usual (BAU) and Extensions
 - Commercial Services
- Customized Headend and Hub documentation
 - Rack Elevations
 - Facility Drawing Details
 - Schematics

Field Survey and Documentation

Documentation for Operational Efficiency



- Strand Walkout
 - Structures, Distances, House Counts, Addresses, Pole Tags, etc.
- RF As-Builts
 - Nodes, Amplifiers, Passives, Power Supplies, etc.
- Fiber Route and Enclosure Audit
 - Fiber Sheath Routes, Enclosure Locations, Storage Loops, Distances, Physical Splice Datasheet, etc.
- Address Audit and Collection
- Documentation Accuracy
 - GPS



Engineering and Design Services

Solutions for the Optical Evolution



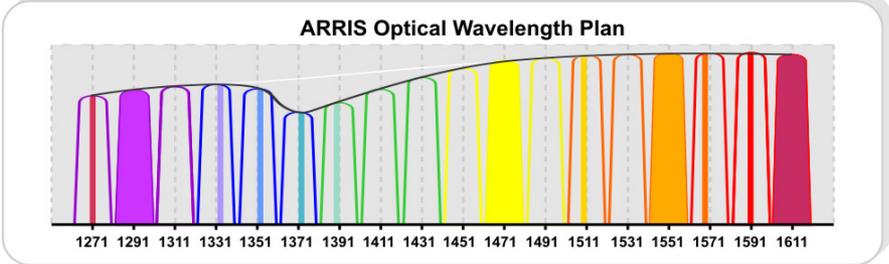
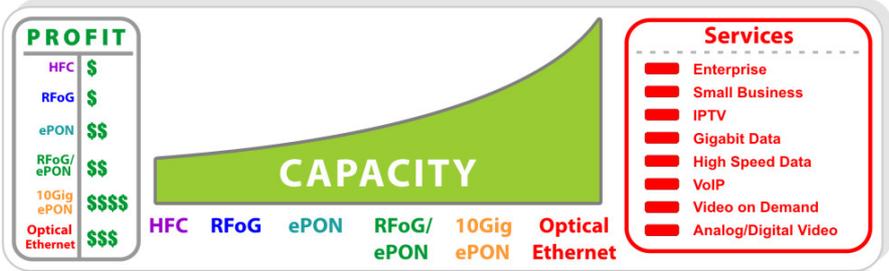
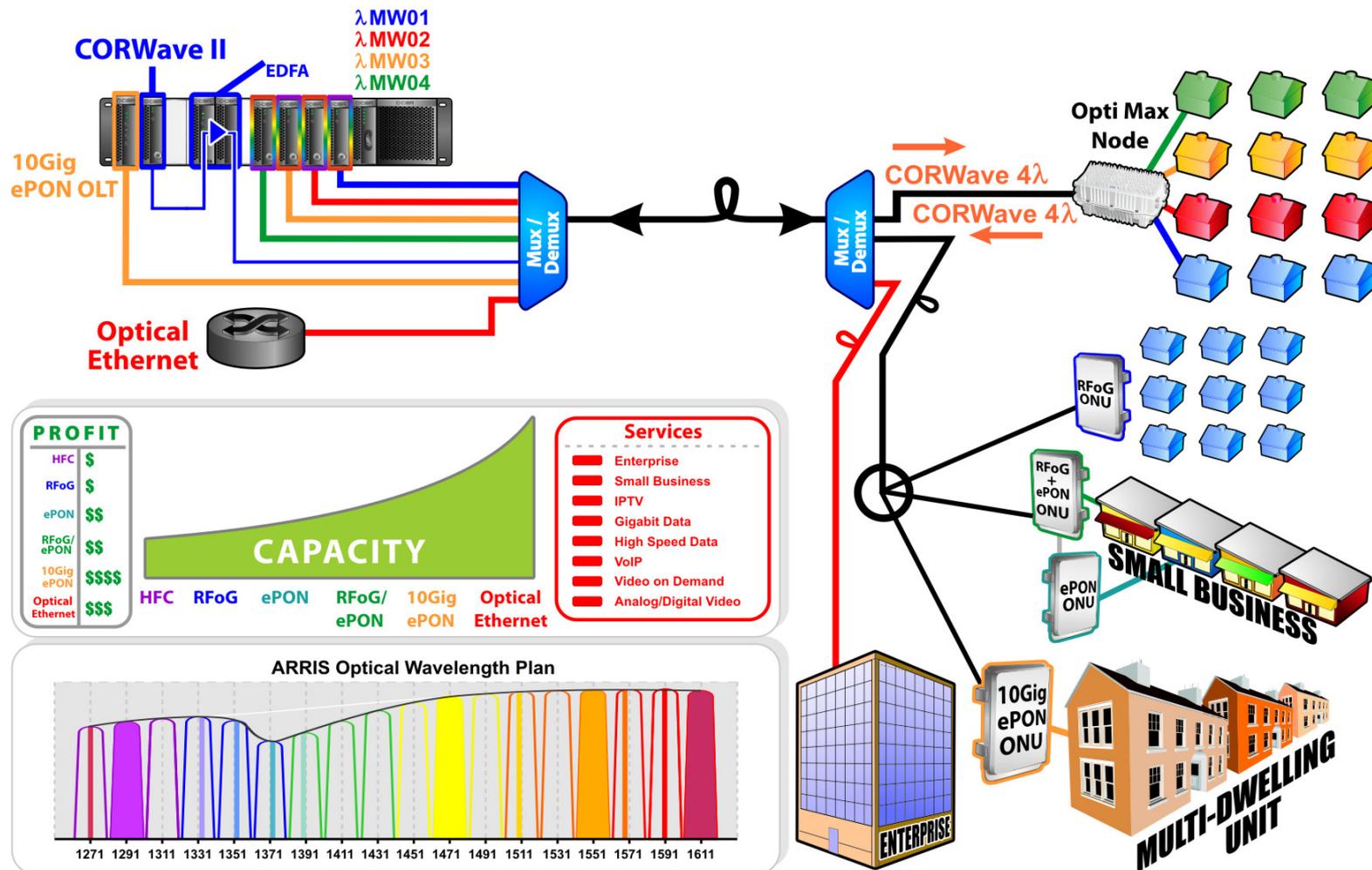
- Increase Bandwidth for Broadcast and Narrowcast Services
 - Bandwidth Expansion Engineering
 - 550Mhz -> 750 MHz -> 870Mhz -> 1GHz -> RFoG -> PON -> MOE
 - Drop In Design
 - Module Swaps
 - Relocation Engineering
- Capacity Engineering: Managing Service Groups
 - De-Clustering
 - Node Segmentation
 - Wavelength Planning

Engineering and Design Services

Solutions for the Optical Evolution



HFC CHP Optical Tx/Rx + RFoG + ePON + 10Gig ePON + Optical Ethernet



New Service Engineering

Expanding Network Capacity and Capability



- Business As Usual Engineering
 - Plant Extensions
 - Residential
 - GIS
- Commercial and Business Engineering
 - Cellular Backhaul
 - Small/Medium Business
 - Government (Local and State)
 - Field Survey
 - ROI Analysis
 - Detailed Design and GIS
 - Bill of Material (BOM)

New Service Engineering

Expanding Network Capacity and Capability



Inside Plant Documentation

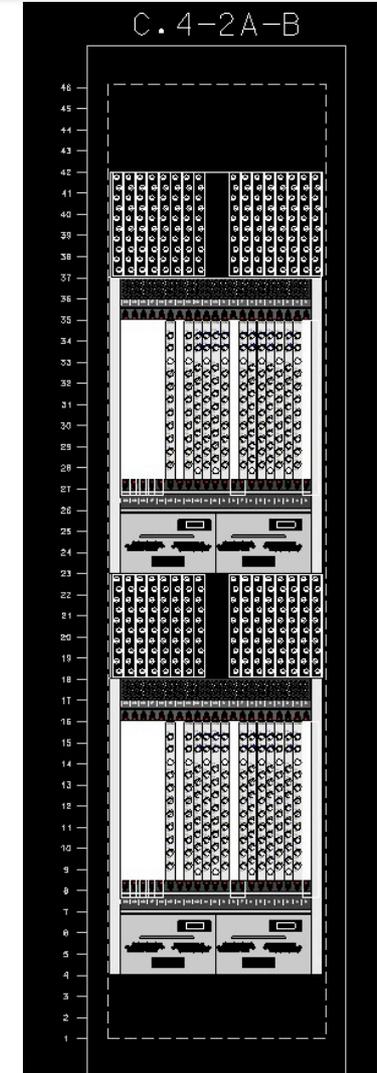
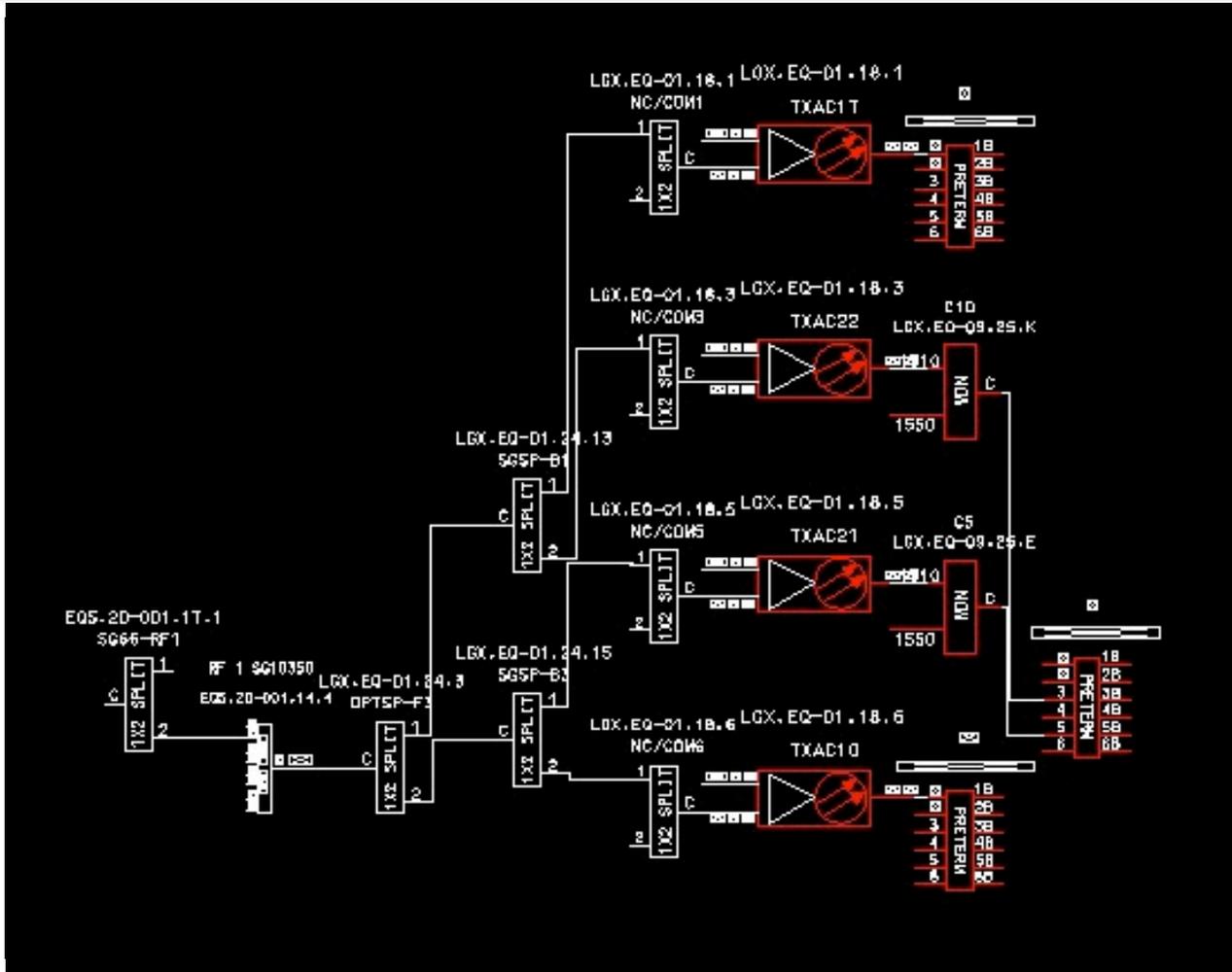
Documenting Network Complexity



- Complete Facility Documentation
 - Floor Plans
 - Pathways Infrastructure
 - Rack/Cabinet Layout
 - Future Planning
- End to End - Network Documentation
 - Detailed Rack Elevations
 - Port to Port Connectivity
 - Equipment Wire Run-Lists
 - Bill Of Materials and Asset Management
 - Dynamic Schematic and Signal Flow Diagrams
 - Troubleshooting and Maintenance Process Flows
 - Network Management System Capability (ARRIS SAE)

Inside Plant Documentation

Documenting Network Complexity



Platform Capabilities

Tools of the Trade



ARRIS Network Design / Software Capabilities

Function:	BentleyCOMM's	Spatial Info	Lode Data	AutoCad / LodeCADD	Visio	MSO Specific - @ Map
RF Design / Outside Plant	X	X	X			
RF Drafting / Outside Plant	X	X	X	X		X
Fiber Design / Outside Plant	X	X				
Fiber Drafting / Outside Plant	X	X		X		X
HE Documentation / Inside Plant	X	X			X	



Implementation Management

PROGRAM & PROJECT MANAGEMENT

Implementation Services

Deploying for Performance and Efficient Operation



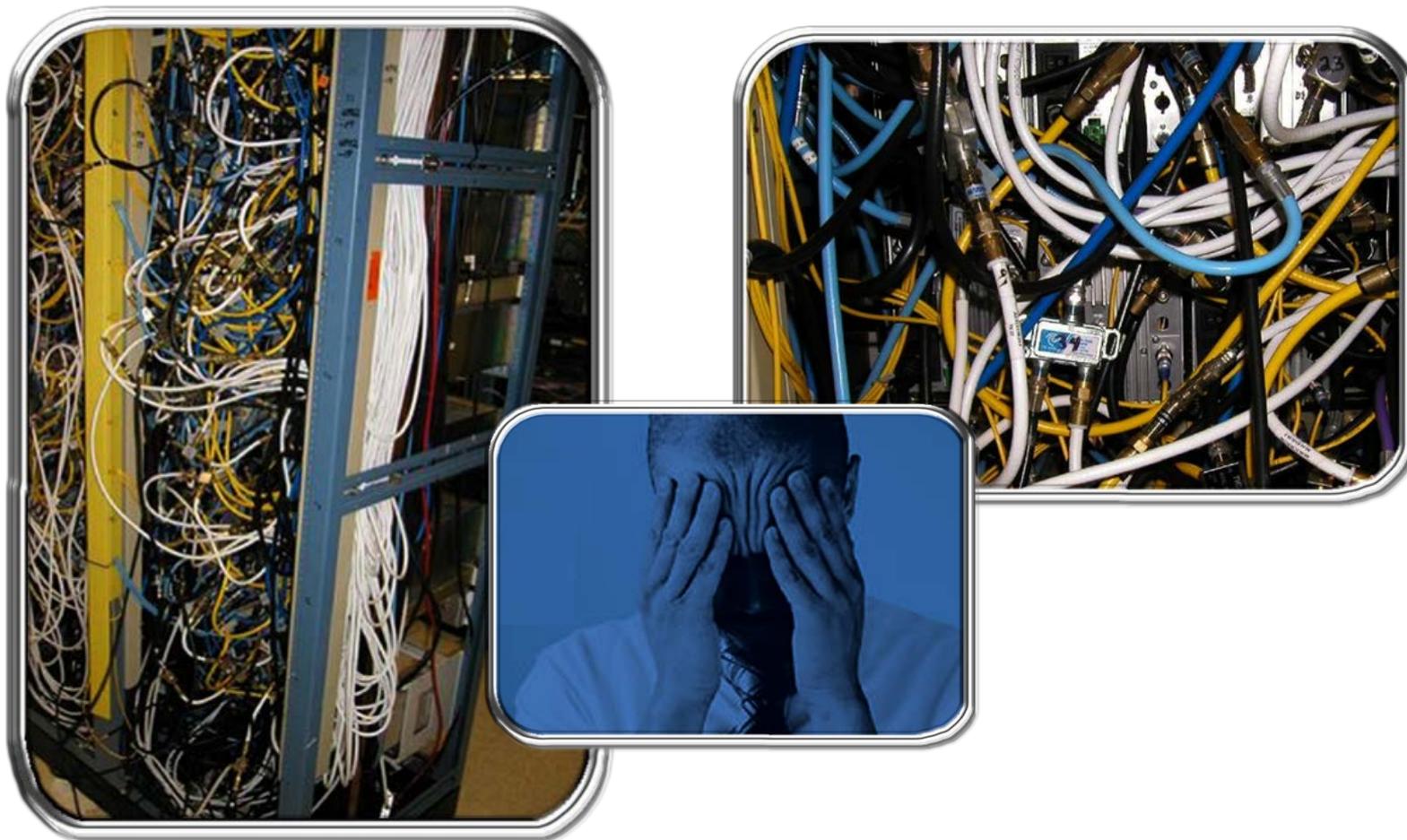
- Program Management
- Procurement Services
- Materials and Logistics Management
- Staging and Pre-Testing
- Installation Services
- System Integration
- Configuration and System Set-Up
- Advanced Testing Services
- Migration, Consolidation and System Relocation
- QA and QC Inspections

Program Management

- Project Planning
- Schedule Management
- Resource Management
- Vendor Management
- Risk Management
- Escalation Management
- Document Management
- Change Management
- Communication Management
- Contract Management
- Cost Management

Network Integration

Working In The REAL World



Implementation Solutions

Example: Infrastructure



Implementation Solutions

Example: Turnkey Deployments





Maintain and Manage

PROGRAM & PROJECT MANAGEMENT

Maintain and Manage Services

Maintaining and Optimizing Network Performance



- Staff Augmentation (Long and Short Term)
- Network Auditing and Databasing
- Network Operations Consulting and Optimization
- Pro-Active Monitoring
- Crisis Management Services
- SLA Management
- Process Optimization
- Custom Reporting and Data Mining
- On-Going Maintenance Testing

Pro-Active Monitoring

Example: ARRIS Monitoring System



The screenshot displays the ARRIS Monitoring Tool interface with several overlapping windows. The main window shows a dashboard for 'C-Cor - Demo Room (Moto)' with a timestamp of 10/28/2008 10:24:57 AM. It includes a navigation bar with 'Home | Change Password | Logout' and a user status 'Logged in as: demo'. The dashboard lists several nodes with their respective health indicators: training-HQRT (HQ), training-ODA (nODA), TEST_Cube (vs), and trainingN5 (vs).

A secondary window is open to the 'Health Checks' section for the 'trainingN5 [VS]' node. It displays a table of health checks with columns for Status, Name, Description, and Reason.

Status	Name	Description	Reason
🟢	Login_VS	Remote Login Attempt	Login Success
🟢	n4_Nodes	Checking for Missing Nodes	nkav.
🟢	Fsid_fd	Checking for FSID Filedes	
🟢	n4_CrashDumps	Checking SCRATCH for Cr	
🟢	n4_FANPSU	Checking FAN's/PSU's anc	
🟢	n4_HAVOCLinks	Checking HAVOC/NHIO Lin	
🟢	BadBlock_Drives	BadBlock count Checks	
🟢	Local_VMDB_Swap	Checking LocalVM Node f	
🟢	n4_Disks	Check for Offline Drives	
🟢	Checksum_Crawler	Checking Checksum Craw	Corrupt content)

Below the health checks, there are sections for 'RTSP Responses All Nodes (Since Last Scan)', 'HardDrive Bad Block Checks', and 'Checking All Disks FirmwareVersions'.

A third window is open to the 'System Files' section for the 'training-ODA [nODA]' node. It displays a table of system files with columns for File Name, Description, and Binary.

File Name	Description	Binary
hosts	Hosts File	False
avalon-components.xml	nODA avalon-components.xml Config File	False
Provision.xml	nODA Provision.xml Config File	False
BCS.xml	nODA BCS Config File	False
balance_requestvm	nODA balance_request.vm Config File	False
Broker.xml	nODA Broker Config File	False
generic.vm	nODA generic.vm Config File	False
InitCarousel.xml	nODA InitCarousel Config File	False
Carousel.xml	nODA Carousel Config File	False
MRS.xml	nODA MRS Config File	False



Full Service Experience. Delivered.

PROGRAM & PROJECT MANAGEMENT

Main Contacts

Professional Services



Jeff Milway

SVP – Operations & Services

O: +1-678-473-8644

M: +1-678-576-2114

E: jeff.milway@arrisi.com

Chirag R. Trivedi

VP – Professional Services

O: +1-720-920-9313

M: +1-303-618-1776

E: chirag.trivedi@arrisi.com

ASIAPAC Contact

Katsumi Takahashi

Senior Manager Technical Support

O: +81-3-5371-4129

E: katsumi.takahashi@arrisi.com

Latin American Contact

German Iaryczower

Vice President Latin American Sales

O: +1-678-749-7928

E: german.iaryczower@arrisi.com

EMEA Contact

Myles Kennedy

Manager Operations

O: +31-36-546-1160

E: myles.kennedy@arrisi.com

EMAIL: proservices@arrisi.com

Questions?



Thank You...