



INFO PACKET

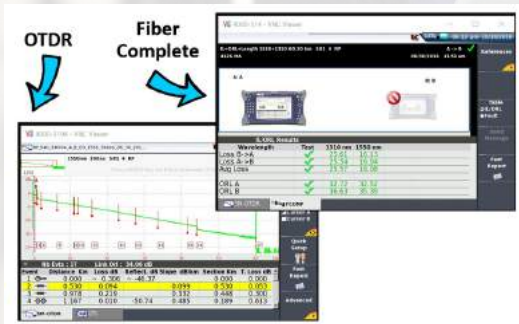
Included Contents:

- Fiber Characterization Training Flyer
- DWDM Fundamentals Training Flyer
- Letter(s) of Recommendation
- 22Solutions Services Overview

FIBER CHARACTERIZATION

→ TRAINING: ON SITE & HANDS ON!

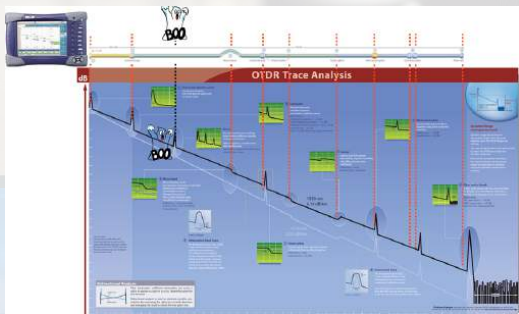
INCREASE NETWORK RELIABILITY!



EMPLOYEES:

- TEST BEFORE SYSTEM TURN-UP!
- EXECUTE FUNDAMENTAL PRINCIPLES
- GAIN NETWORKING INSIGHTS

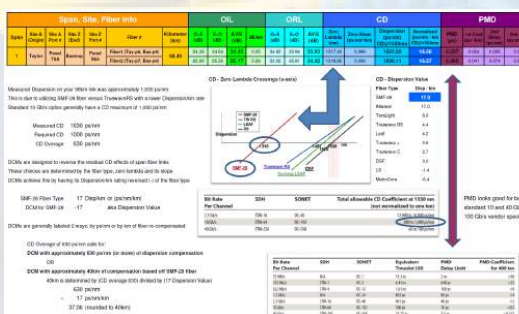
REDUCE TIME TO RECOVER!



EMPLOYEES:

- FIND/FIX ISSUE(S) FASTER!
- TROUBLESHOOT EFFECTIVELY
- GAIN CONFIDENCE & EXPERIENCE

DECREASE EMPLOYEE ERRORS!



EMPLOYEES:

- RECOGNIZE SYSTEM VULNERABILITIES!
- FOLLOW DOCUMENTED PROCEDURES
- EXERCISE CAUTION EFFECTIVELY



ENHANCED COMPREHENSION

- **GAIN ENLIGHTENMENT OF YOUR OWN NETWORK!**
- **TRAIN WITH YOUR OWN NETWORK, GEAR & FIBER!**

“THE INSIGHTS GAINED ALLOWED OUR TEAM TO BETTER PREPARE AND UNDERSTAND INEVITABLE CHALLENGES AND OVERCOME NETWORK DEFICIENCIES IN A TIMELY MANNER.

BOBBY WAWAK [NETWORK ENGINEER, UNIVERSITY OF TEXAS]

”

LEARN, TEST & TROUBLESHOOT

- **FIBER CHARACTERIZATION (OTDR, OIL, ORL, CD & PMD)**
- **FIBER-SCOPING, CLEANING & FIBER-TESTING PROCEDURES**
- **TROUBLESHOOTING-TECHNIQUES & PROCEDURES**
- **REQUIREMENTS FOR FIBER SPECS, GOOD ORL & CLEAN FIBER**

AFTER COURSE → BE ABLE TO

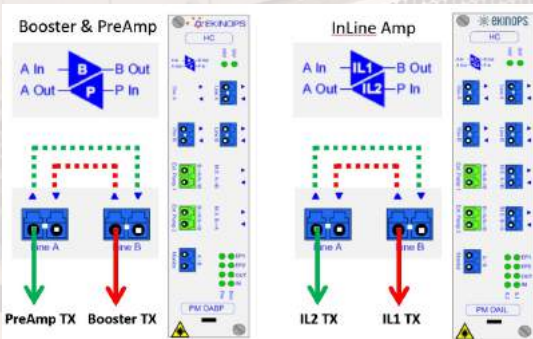
- **PERFORM FULL-FIBER CHARACTERIZATION TESTING**
- **EXPLAIN, TRACK-DOWN AND ELIMINATE SYSTEM ANOMALIES**
- **TROUBLESHOOT USING REAL-TIME OTDR SHOTS**

“WE WERE ABLE TO PERFORM FIBER TESTING AND FIX SEVERAL ISSUES FOR AN UPCOMING DWDM PROJECT DIRECTLY AFTER TRAINING. JOHN WAS INSTRUMENTAL IN THIS SUCCESS AND WE NOW HAVE PLANS FOR ANOTHER TRAINING COURSE THIS YEAR.

JERRY DAUGHERTY [TELECOM SYSTEMS SPECIALIST, LCRA]



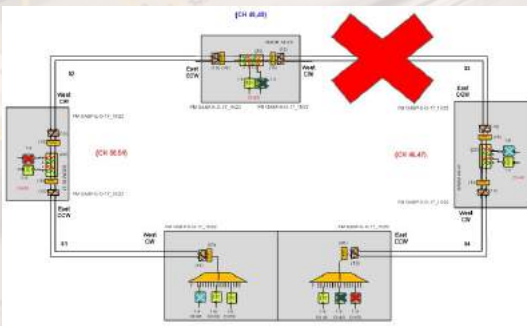
INCREASE NETWORK RELIABILITY!



EMPLOYEES:

- BUILD IT RIGHT THE FIRST TIME!
- EXECUTE FUNDAMENTAL PRINCIPLES
- GAIN NETWORKING INSIGHTS

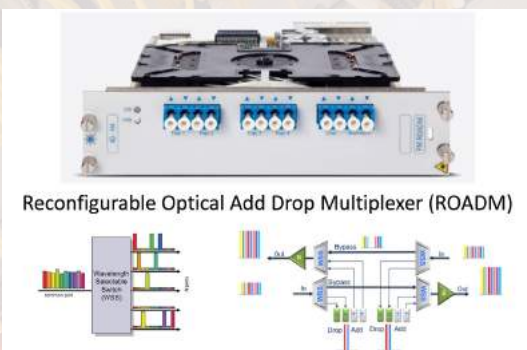
REDUCE TIME TO RECOVER!



EMPLOYEES:

- FIND/FIX ISSUE(S) WITH EASE!
- TROUBLESHOOT EFFECTIVELY
- GAIN CONFIDENCE & EXPERIENCE

DECREASE EMPLOYEE ERRORS!



EMPLOYEES:

- PROTECT SYSTEM SPECIFICATIONS!
- FOLLOW DOCUMENTED PROCEDURES
- EXERCISE CAUTION EFFECTIVELY

ENHANCED COMPREHENSION

- GAIN ENLIGHTENMENT OF YOUR OWN NETWORK!
- TRAIN WITH YOUR OWN NETWORK, GEAR & FIBER!

“THE INSIGHTS GAINED ALLOWED OUR TEAM TO BETTER PREPARE AND UNDERSTAND INEVITABLE CHALLENGES AND OVERCOME NETWORK DEFICIENCIES IN A TIMELY MANNER.

BOBBY WAWAK [NETWORK ENGINEER, UNIVERSITY OF TEXAS]

”

LEARN, TEST & TROUBLESHOOT

- DWDM FUNDAMENTALS (ROADMS, AMPS, OPTICS, CH, ETC...)
- FIBER-SCOPING, CLEANING & SYSTEM-TESTING PROCEDURES
- TROUBLESHOOTING-TECHNIQUES & PROCEDURES
- REQUIREMENTS ON DWDM SPECS, GOOD ORL & CLEAN FIBER

AFTER COURSE → BE ABLE TO

- PERFORM STANDARD DWDM SYSTEM INSTALL & LOOP-TEST
- EXPLAIN, TRACK-DOWN AND ELIMINATE SYSTEM ANOMALIES
- TROUBLESHOOT & BALANCE WAVES WITH OSA/CH-CHECKERS

“WE WERE ABLE TO PERFORM FIBER TESTING AND FIX SEVERAL ISSUES FOR AN UPCOMING DWDM PROJECT DIRECTLY AFTER TRAINING. JOHN WAS INSTRUMENTAL IN THIS SUCCESS AND WE NOW HAVE PLANS FOR ANOTHER TRAINING COURSE THIS YEAR.

JERRY DAUGHERTY [TELECOM SYSTEMS SPECIALIST, LCRA]

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LETTER OF RECOMMENDATION

→ LOWER COLORADO RIVER AUTHORITY



Letter of Recommendation Concerning:
John Pullicino & 22 Solutions LLC

February 20, 2019

To whom it may concern,

Through a network collaboration project, I've worked with John Pullicino and his 22Solutions LLC team since 2015. During this network collaboration they provided DWDM system Turn-Up, Installation and Fiber-Testing and since their build-out process was so systematic I keep in touch with them for future potentials.

Shortly thereafter in 2016 we contracted 22Solutions to provide a custom Hands-On Fiber-Testing Training-Course for 10 of our Telecom Operations technicians. John personally built us a fully custom 3Day training course where he suggested the last day be 100% hands-on training where our technicians would go into the field and test-our-own-network-fibers. This hands-on training was valuable in helping understand and seeing firsthand what they learned in the class room. During this field training, they were able to perform fiber complete testing and fix several issues on a pair of fibers for an upcoming DWDM project.

In 2017 we had 22Solutions build another training course this time for DWDM-Fundamentals and System Operations. They also aided us in a very sensitive NO-Roll-Back Hot-Cut System-Roll where once the fibers were cut and panels removed, we had to make the new connections work 100%.

– John was instrumental in our projects success and we now have plans for another custom training course this year.

22Solutions is a trusted partner for our network deployment, system troubleshooting and employee training strategy

– I couldn't recommend them enough!

Sincerely,

A handwritten signature in blue ink that reads 'Jerry Daugherty'.

Jerry Daugherty
Telecom Systems Specialist



LETTER OF RECOMMENDATION

→ THE UNIVERSITY OF TEXAS SYSTEM

Bobby Wawak
Network Engineer
The University of Texas System
Office of Telecommunication Services



Recommendation For:
22 Solutions LLC
John Pullicino
Founder

February 19, 2019

To whom it may concern,

As an employee of the University of Texas who is technically involved with the acquisition, maintenance and installation of DWDM optical equipment with our network I have had the pleasure of working with John Pullicino and 22Solutions LLC since 2013. Over which time, they have provided services ranging from Advanced DWDM system Turn-Up, Installation, Fiber-Characterization even Employee-Training. Our first project together was troubleshooting and reconfiguring our Live 1.6 Tb DWDM ring. Their knowledge and system expertise proved invaluable on safe troubleshooting and accurate reconfiguration of our Live System.

Recently we attended 22Solutions's DWDM-Fundamentals and System Operations 2-day training course and the insights gained allowed our team to better prepare and understand inevitable challenges and overcome network deficiencies in a timely manner. One of our employees stated that 'John was able to Connect-the-Dots for him like he's never seen before concerning DWDM.'

We continue to use 22Solutions LLC for system installs, maintain overall network health and to grow our employee's knowledge base. They are a trusted resource in our deployment and operations strategy and I highly recommend them for their professionalism, responsiveness and willingness to go the extra-mile to ensure a project's success with system implementation, fiber testing and even employee training.

Sincerely,

A handwritten signature in black ink that reads "Bobby Wawak". The signature is stylized with a large, flowing "B" and "W".

Bobby Wawak

Network Engineer



LETTER OF RECOMMENDATION

→ E K I N O P S



Date: June 15, 2015

Subject: Letter of Recommendation

John Pullicino

Founder and Lead Systems Engineer

22 Solutions LLC

To whom it may concern,

John Pullicino, owner of 22Solutions, has been a strategic U.S. partner with us for over 7 years now. He has consistently proven to be a reliable asset to Ekinops in providing expert services ranging from Fiber-Characterization, EF&I-Services, Test & Turn Up, Ethernet & BER Testing as well as Live System Re- Balancing, Hot-Cuts, System-Rolls including On-The-Fly troubleshooting and System Redesigns that have “sealed the deal” for us multiple times.

John’s adaptability and tenacity in multiple projects were the driving force to provide On-the-Fly Solutions, Support and Workarounds which overcame unforeseen challenges and Outside Plant deficiencies in a timely manner.

Prior to 22Solutions, John worked at MGI taking on dual roles as Lead Systems Engineer and Project Manager for our client’s 4G Nationwide Initiative which consisted of 20 DWDM Metro Rings within 14 Markets Coast-to-Coast. He and his crews performed very well and the entire rollout was an absolute success with 100% On-Time-Completion for Every-Market & Every-Ring.

Time and again, John has shown adept troubleshooting skills by referencing his years of experience along with his ability to think outside of the box. Both John and 22Solutions have been a valued partner in our services and support strategy in the U.S. and I highly recommend them for their willingness to go the extra mile to lock down customer satisfaction, project success and network reliability.

Sincerely,

Jonathan Amir

Vice President EMEA



LETTER OF RECOMMENDATION

→ PEG BANDWIDTH

PEG Bandwidth

September 24, 2012

John Pullicino
Principal, Systems Integration Test & Project Management Engineer
22 Solutions LLC

To whom it may concern,

I have had the pleasure of working with John Pullicino and 22 Solutions for the past year and a half. Over which time, they have provided services ranging from fiber characterization to advanced DWDM system installation and turn-up. Our first project together was deploying a 1.6 Tb Ekinops DWDM ring in the DFW area. Their former knowledge of Collo-hotels, specific dark fiber venders and system expertise proved invaluable for the timely turn-up of this system. As with any project, there are always unforeseen issues - 22 Solutions provided an advanced de-brief of trouble areas based on system design and knowledge of the DFW area. Their insight allows us to prepare for the inevitable challenges and overcome Outside Plant deficiencies in a timely manner. I am convinced that our deployment schedule would have suffered multi-week delays if it were not for 22 Solutions and John Pullicino's specific expertise with DWDM systems, industry contacts and intuition of the OPS landscape in the DFW area.

Since our initial project, we have used 22 Solutions to continue to grow our network, install other systems and maintain overall network health. They have been a staple partner in our deployment and operations strategy and I highly recommend them for their professionalism, responsiveness and willingness to go the extra-mile to ensure a project's success in light of difficult challenges.

Sincerely,

Christopher Pickard

CTO & VP - Network Operations

PEG Bandwidth



LETTER OF RECOMMENDATION

→ RECOVERYPOINT SYSTEMS



Recovery Point
75 West Watkins Mill Road
Gaithersburg MD 20878
1-877-445-4333

Date: 9/18/2012

Subject: Letter of Recommendation

To whom it by concern,

I have worked with John Pulicino over the past couple of years when dealing with our dark fiber network and DWDM equipment. Within this brief time span John has proven time after time, his keen sense of technical engineering ability and focus of project management.

Since the beginning of our first technical engagement I felt very confident in John undertaking some project challenges we were facing. It's one of those things you can sense like a "gut feeling" that sets your level of comfort and assurance. There was no need to over explain what our challenges were but more of what our deadlines were and how John would help us achieve our goal. John is always well prepared, clear in communications and meticulous with documentation for each of our engagements.

John is very adaptive and quick on his feet willing to take risks but with caution and business approval. He is a person anyone would want on their team without exception. He takes personal pride in his work and is very passionate about the quality of work he produces.

It seems rare these days but to be honest, John has the wherewithal and creativity to be a great business leader.

Sincerely,

A handwritten signature in black ink, appearing to read "Ralph J. McLamara II".

Ralph J. McLamara II



BUILDING NETWORKS?

TRAINING EMPLOYEES?

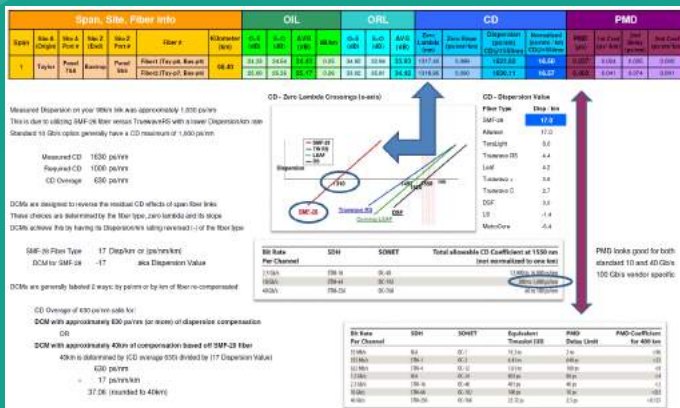
TURNING-UP LINKS?



HAS YOU COVERED !

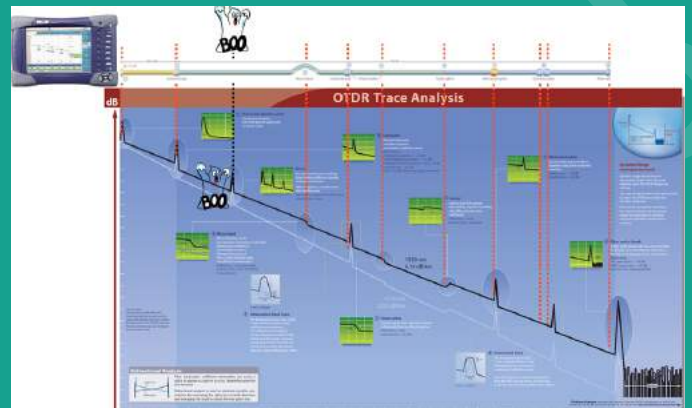
LINKS THAT WORK THE FIRST TIME

- CIRCUIT & FIBER TESTING -



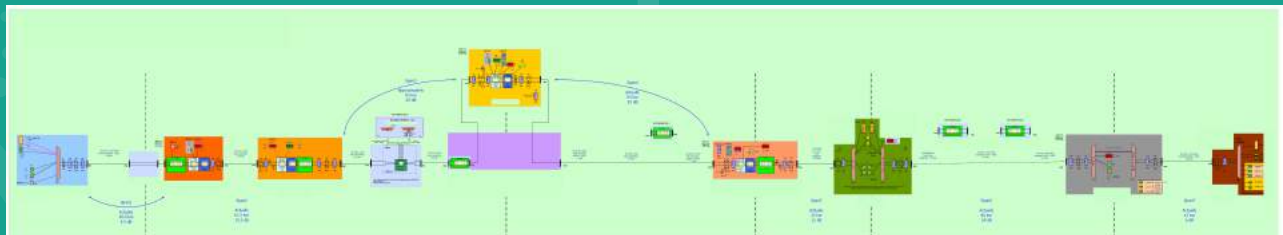
GAIN INSIGHT & LEARN NEW SKILLS

- EMPLOYEE TRAINING (ONSITE) -



STREAMLINE IMPLEMENTATION & DELIVER ON-TIME

- DESIGN, INSTALLATION, TURN-UP & TESTING -



CONNECTIVITY PROBLEM RESOLUTION AND WORKAROUNDS

- INDEPENDENT TESTING, TROUBLESHOOTING & VALIDATION -

MPLS Networks



Hosted Phone System



Fiber Ethernet DIA



Managed Cloud Services



SIP Trunking



ENLIGHTEN YOUR NETWORK™

(202) 505-2070
WWW.22SOLUTIONS.COM

TESTING & TROUBLESHOOTING SERVICES:

- CIRCUIT TESTING - [ETHERNET, FIBRE CHANNEL & SONET]
- FIBER CHARACTERIZATION TESTING - [ORL, OIL, CD, PMD, OTDR]
- INDEPENDENT TESTING, TROUBLESHOOTING & VALIDATION

“ I'VE BEEN VERY CONFIDENT WITH JOHN SINCE OUR FIRST TECHNICAL ENGAGEMENT IT'S JUST ONE OF THOSE "GUT FEELINGS" YOU GET WHEN YOUR COMFORT LEVEL AND ASSURANCE IS SET. HE'S PROVEN TIME AFTER TIME ON HIS KEEN SENSE OF TECHNICAL ABILITY, FOCUS ON PROJECT MANAGEMENT, PREPARATIONS AND IS METICULOUS WITH DOCUMENTATION...

RALPH MCLAMARA [SENIOR NETWORK ENGINEER, RECOVERYPPOINT] ”

OPTICAL NETWORKING SERVICES:

- TURN-UP & TEST [SONET, DWDM, ETHERNET]
- DESIGN, ENGINEERING, AND PROJECT MANAGEMENT
- DWDM OSA CHECK WITH LIVE SYSTEM RE-BALANCING
- RACK & STACK, ENGINEER FURNISH & INSTALLATION (EF&I)
- ALL WITH NATIONWIDE ROLLOUT CAPABILITIES

“ JOHN HAS A HIGH DEGREE OF INTEGRITY, RESPONSIBILITY AND ALWAYS DEMONSTRATES DEVOTION IN GETTING THE JOB DONE RIGHT, THE FIRST TIME. JOHN'S TECHNICAL LEADERSHIP HAS ENABLED HIS CREWS TO CONSISTENTLY FINISH PROJECTS ON-TIME AND ON-BUDGET WITH PROFESSIONAL RESULTS. I STRONGLY RECOMMEND JOHN; HE'S HARD WORKING, ORGANIZED, DRIVEN AND DEPENDABLE...

KELLY SHOCKLEY [FIBER SERVICES MANAGER, FUJITSU] ”

EMPLOYEE TRAINING SERVICES:

- COURSE: DATA CENTER FIBER TRAINING
- COURSE: FIBER CHARACTERIZATION TRAINING
- COURSE: DWDM FUNDAMENTALS AND SYSTEM OPERATIONS
- ON-SITE, HANDS-ON, ON-THE-JOB TRAINING
- CUSTOM BUILT TRAINING COURSES

“ WE HIGHLY RECOMMEND 22 SOLUTIONS AND JOHN AS HE PERFORMED TRAINING FOR JDSU EDUCATIONAL SERVICES. OUR CUSTOMERS COMMENDED JOHN FOR HIS EXCELLENT WORK IN PROVIDING TECHNICAL TRAINING AS HE HAS EXCEPTIONAL ORGANIZATIONAL AND COMMUNICATION SKILLS, IS FLEXIBLE AND EASY TO RELATE TO AND ALSO OFFERS ADDITIONAL ASSISTANCE TO ENSURE TRAINING ACHIEVEMENT THUS HE HAS OUR HIGHEST RECOMMENDATION...

STEVE CHEW [EDUCATIONAL SERVICES MANAGER, JDSU/VIAMI] ”