EXFO Connect Contractor Mode

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INTRODUCTION

In a world of quicker, better, cheaper, service providers increasingly employ contractors to perform field telecom services. Although OPEX reduction remains the primary factor driving this trend, others such as faster time to market, new technology support and optimized asset utilization are growing in importance. However, as service providers continue to push the balance between reducing costs and maintaining service levels, they encounter several challenges such as:

1. Ensuring work is done according to established procedures and completed correctly.

2. Losing control of field operations, especially when dealing with performance issues.

3. Losing visibility of job completion status and network performance.

4. Facilitating service-provider-to-contractor-workforce communication.

Similarly, contractors are struggling to maintain their commitments and remain competitive. They experience their own challenges:

1. Increasing technician efficiency, while dealing with specific procedural requirements, manual data entry and training pressures.

2. Scheduling headaches caused by matching a technician's skillset to the job requirements, and minimizing repeat truck rolls due to issues in the field.

3. Minimizing service provider reporting overhead.

4. Providing proof of job completion to meet deadlines and facilitate payment.

A valid test results file generated in a contractor test set is the most tangible proof of job completion. It concludes the workflow process, which is comprised of a work order (job ticket) creation and assignment, truck roll, site access and setup, cable install and/ or equipment commissioning and finally, testing. Assigning a field technician (according to location, equipment, skill, schedule, etc.) to a work order, providing the required procedures, training and support as well as facilitating the communication of correct test files can be difficult for service providers and their own workforce. Automating workflows for contractor technicians and their test equipment can be even more problematic without an infrastructure for knowledge sharing, policy enforcement, support and data transfer.

In early 2011, EXFO introduced EXFO Connect, a revolutionary suite of applications designed to help service providers accelerate network deployments while reducing operating expenses. Today, with the latest release of EXFO Connect, EXFO introduces a new feature called Contractor Mode, which enables service providers to manage contractor test equipment, allow test data uploads, provide centralized storage and customize reporting and many other benefits.

WHAT IS EXFO CONNECT?

EXFO Connect is a comprehensive, cloud-based, data-management service that is specially designed optimize telecom field-test workflow operations. The software services delivered by EXFO Connect include a powerful reporting engine, 24/7 global user access through a Web-based interface, secure communication links for both users and test equipment, application programming interfaces (APIs), as well as a fully managed infrastructure for security and backups.

WHAT IS CONTRACTOR MODE?

Contractor Mode is an EXFO Connect-enabled feature that allows contractor test equipment to access a secure, segregated area of a service provider's EXFO Connect server to upload and download test-related files and documentation. Essentially, test results can be uploaded directly upon job completion for immediate visibility by the service provider – no USB stick file-swapping, no test results consolidation and no report preparation by the contractor. In addition, per-contractor profiles can be created to enable the automatic download of test procedures, configuration files, how-to training videos and other useful information. Plus, Contractor test equipment can be remotely controlled by the service provider's technical support for on-the-spot troubleshooting.

HOW DOES EXFO CONNECT SUPPORT WORKFLOW AUTOMATION?

Typically, technicians complete jobs based on work orders (see point A in Figure 1). They can be manually created or automatically generated by an assignment system, or a combination of the two. A work order contains reference data, namely:

› Address/location

› Circuit information

› Service type (e.g., Ethernet private line)

› Service parameters (e.g., throughput = 50 Mbit/s)

› A QoS profile (e.g., Silver)

› Technician assignments (based on location, training/skill level and associated equipment)

Once this data is interpreted, a test configuration file (see point B in Figure 1) is automatically downloaded into a technician's test set (note: test parameters can also be manually input by the technician). For example, the Silver QoS profile for the Ethernet service may have specific threshold levels for latency, jitter and packet loss. When testing is completed, the test results file (containing all pertinent reference information) must be forwarded to work-order management (see point C in Figure 1). Once received, the completion status can be ascertained from the test data (see point D in Figure 1) and the appropriate follow-up actions can be taken (e.g., close work order, repeat truck roll for troubleshooting, etc.)

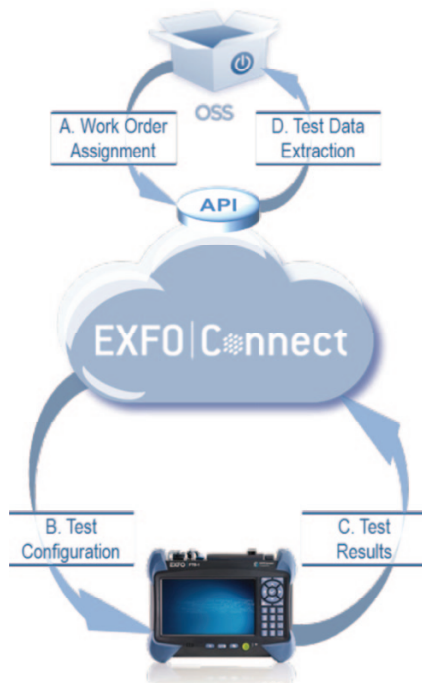**EXFO** | Telecom Test and Service Assurance

Figure 1. Automated workflow

The remainder of this application note will focus on the aspects of test set connectivity to back office systems which aids workflow automation and its relevance to Service Provider management of Contractor labor.

Figure 2 breaks down the workflow process into three steps:

STEP 1. Download work order information, configuration files and supporting information (test methods and procedures) and relevant training material ("how-to" multimedia videos).

STEP 2. Provide support using remote control and instant messaging/VoIP apps.
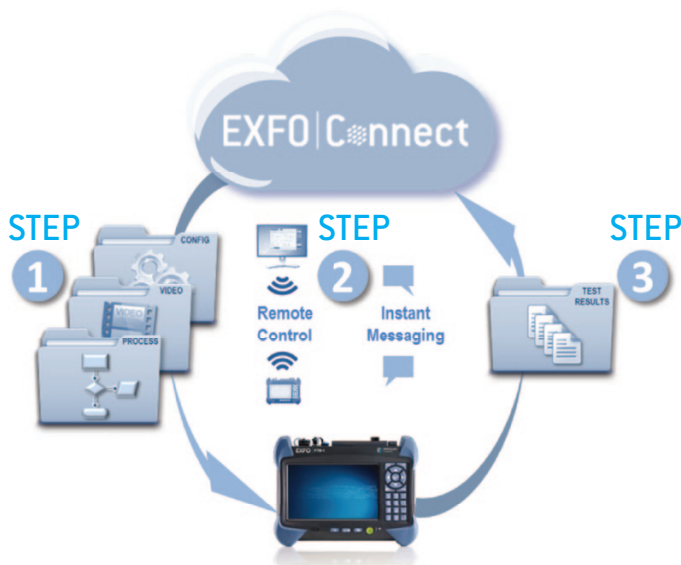
STEP 3. Upload test results files upon job completion.

Figure 2. File sharing

STEP 1 – ENSURING FIRST-TIME-RIGHT JOB COMPLETION AND INCREASING SERVICE LEVELS

Service providers may have to deal with multiple contractors, either simultaneously or separately depending on the nature of the project. While service providers can provide instructions on the work to be completed, they have very little control over the consistency of the work done from one contractor to the next. They have no means to distribute methods/procedures, configuration files or even training information directly to contractor technicians. This is where Contractor Mode comes in. Service providers can now use their existing EXFO Connect server to store methods and procedures, configuration files or how-to videos (e.g., fiber inspection and cleaning) in a contractor-specific profile. As soon as said contractors' test sets connect to the EXFO Connect server, files will be automatically downloaded for the technician to use.

Figure 3. How-to videos and other helpful information

Let's look at some examples.

1. A service provider creates a test configuration file with specific service performance threshold values (e.g., frame loss, latency, and jitter) to ensure that his customers are getting the service they pay for – no more, no less.

2. A service provider's engineering group develops a specific test procedure that allows technicians to ensure a quicker turn-up.

This transfer of information can be brought to the next level thanks to seamless integration with an operations support system (OSS). With the additional information provided by the OSS, job-specific test configuration files can be transferred via EXFO Connect when triggered by the OSS. This powerful interaction is made possible thanks to the open application programming interface (API). On the one hand, the service provider gets faster job completion because manual data entry steps and errors are minimized. On the other hand, contractors can maximize the number of jobs per technician, per day. With Contractor Mode, all the elements are in place to get the job done right.

STEP 2 - MEETING SERVICE COMMITMENTS DESPITE REDUCED TRAINING BUDGETS, UNEVEN SKILLSETS AND INCREASING RESPONSIBILITIES

By the nature of their work, field technicians are facing an ever-changing network topology and constantly evolving technologies. If less-experienced technicians run into difficulty, the last thing a service provider or contractor wants is an additional truck roll. In such circumstances, remote support capabilities become mission critical. Using the power of the FTB's Windows-based platform, any technician in need of help can talk and/or instant message any expert from the service provider's technical support (see Figure 4). This is especially valuable when the technician is in the middle of a building with Wi-Fi, but no cellphone access.
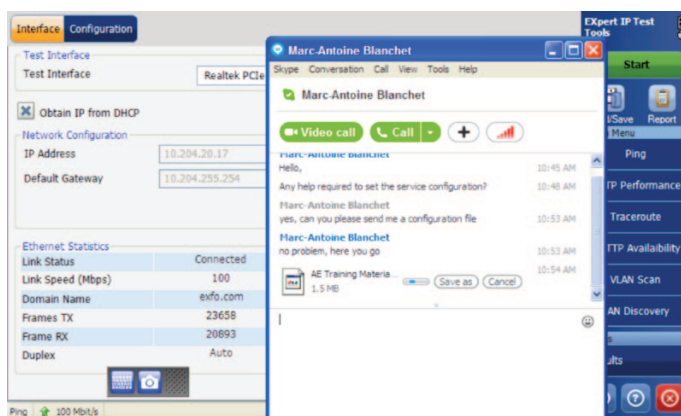

Figure 4. Technical support window

Using the complete connectivity offered by the FTB platform (e.g., 3G/4G, Wi-Fi), Contractor Mode leverages EXFO Connect's integrated remote-control capability to allow service providers to remotely control a contractor technician's test set (see Figure 5). For the service provider, this means that on-the-fly coaching becomes possible, specific settings can be adjusted in real time and troubleshooting methods can be validated. Ultimately, this will mean fewer repeat truck rolls. For the contractor, this will reduce project-planning headaches by minimizing the need to schedule technicians based on specific skill levels.
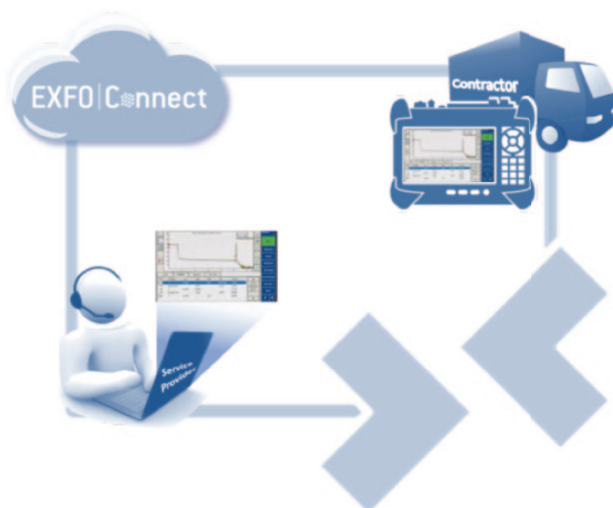

Figure 5. Remote control capabilities

STEP 3 – OBTAINING 24/7 VISIBILITY OF CONTRACTOR SCHEDULING AND NETWORK PERFORMANCE

Optimizing overall network deployment as well as per-service turn-up time is a daily challenge for any service provider. Reducing the average time to get test results not only means faster revenue recognition, it also provides immediate visibility of network performance and trends. Contractor Mode enables test results files to be automatically queued on a technician's test set. When a test set connects to the service provider's EXFO Connect server, technicians simply confirm which files they want to upload. For the technician, this means no USB sticks, no file swapping and no manual report creation based on extracting data from text or PDF files. For the contractor's technician manager, this means no email attachments to coordinate from multiple technicians; all test results flow back to the service provider with minimal user intervention. Thanks to the dynamic database storage of all test results (i.e., not just pass/fail status), the service provider can easily track key performance indicators (KPI) and benchmark threshold levels using the built-in, customized reporting capability, or extract them for off-line analysis using the EXFO Connect API (see Figure 6).
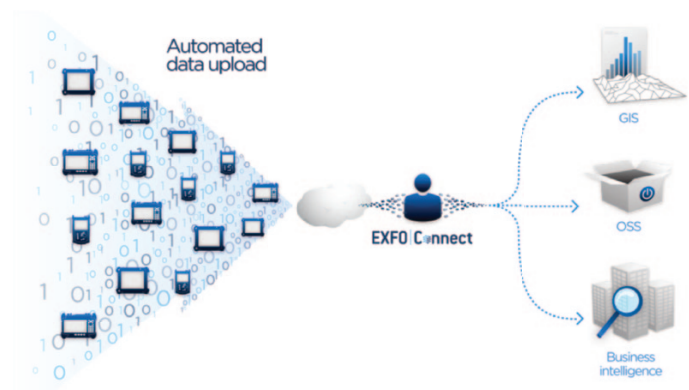

Figure 6. The big picture

For the service provider, the benefits include:

> Immediate visibility of the job completion schedule
> Immediate visibility of pass/fail results
> Ability to drill-down to specific measurement data across multiple tests/test sets

For the contractor, the benefits include:

> Maximizing jobs per technician and per day
> Removing the administrative burden of preparing end-of-day test reports from the technician
> Eliminating the overhead from coordinating multiple technician test reports from the manager
> Faster job completion for quicker payment

ENABLING CONTRACTOR MODE WORKFLOW AUTOMATION

When a contractor is awarded a project, they simply have to inform the service provider of the test sets that will be used. The service provider can then authorize the test sets using a pool of available licenses and generate a certificate to allow them to securely connect to the EXFO Connect server. The data exchange is segregated according to contractor, so contractors can neither access the service provider test equipment and results nor those of any other contractor. This segregation also benefits contractors in that it allows them to work for multiple service providers without fear of sending back the wrong results. When a contractor finishes a project, the service provider simply returns the test set licenses to the pool to be reused for other contractors.

SERVICE PROVIDERS AND CONTRACTORS FINALLY RUNNING AT FULL EFFICIENCY

In conclusion, EXFO has been increasing optical field-testing efficiency through automation for years, namely through its iOLM and ConnectorMax products, its copper access testing with SmartR and Ethernet turn-up testing with EtherSAM.

EXFO Connect's Contractor Mode is just one more step towards ultimate efficiency. It enables service providers to automate their operational workflow when working with contractor labor. All contractor test data now automatically flow to the service provider's EXFO Connect environment, providing immediate visibility of job status and network performance. Service providers can directly distribute test configuration files, methods and procedures as well as "how-to" videos to the test sets; eliminating emails and file transfer hassles. Plus, all files are downloaded as soon as a test set connects to the EXFO Connect environment; eliminating human intervention. Furthermore, by leveraging the connectivity of the FTB platform and existing EXFO Connect features, like remote control, contractors will know that all technicians can handle all jobs. Unnecessary truck rolls are easily avoided and the job is done right the first time.

Welcome to the world of quicker, better and more cost-effective test operations!

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