

Risk of Error Reduction in OTDR Report Generation Process

OTDR Acceptance report generation is a tedious process with a high risk of errors. Many tables, including thousands of results, must be generated and compiled into a single document. This process is not only time consuming, but represents a quality risk in the results provided to the customer.

The need for speed – the drive for quality

Speed is an integral part of the report generation process. Fiber installers need quick, accurate, and efficient report generation software, allowing expedited report delivery and fast payment. In the past, various software tools, combining fast report generation and increased data manipulation capability, have been introduced on the market.

From OTDR trace selection to report printout, the recently introduced report generation software is designed with only a few automated steps. This forces the user to regenerate reports due to missing, incorrect, or incomplete results. Instead of saving time, the software increases the amount of work and the risk of errors due to the need for repeated data manipulation.

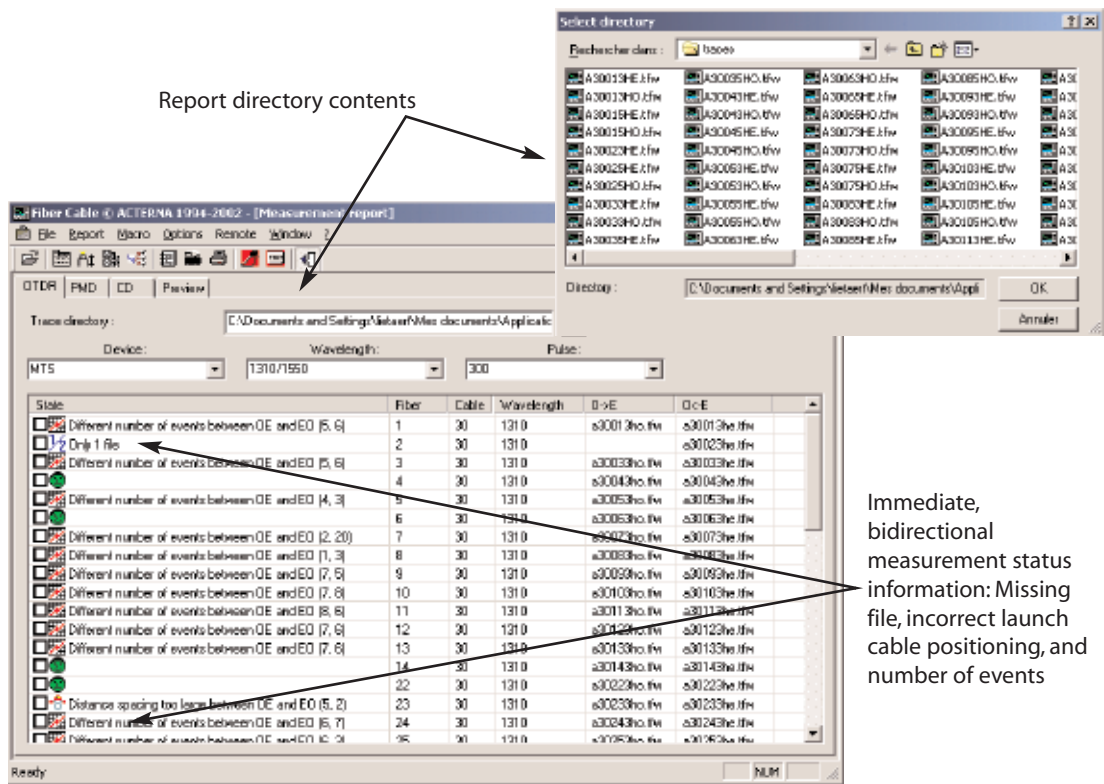
Clearly, the time required to achieve correct and validated results becomes a major factor for users when deciding which software tools to purchase.

As a result, quality management and time savings are equally important in the automation process of report generation.

Fully automated processing, the drawbacks...

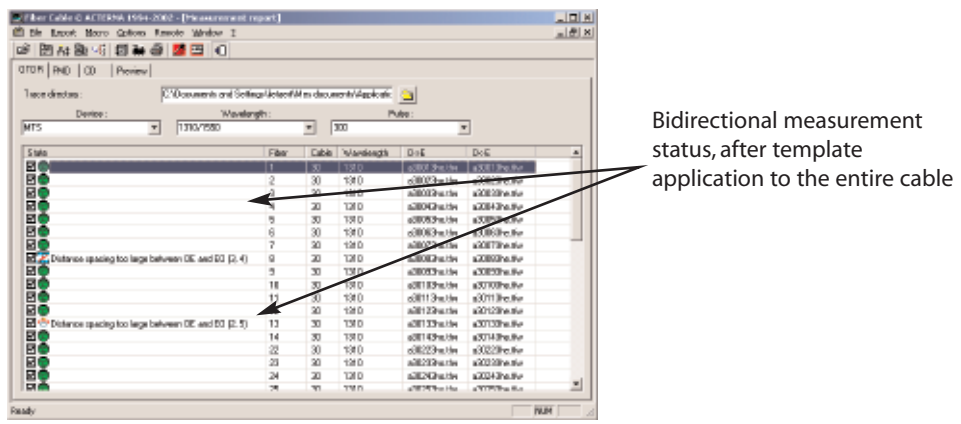
Optical fiber measurement requires the creation and maintenance of detailed documentation for database records and future use of OTDR traces. This documentation, which includes the fiber number, cable ID, and measurement information, automatically links traces to the fiber. Any automated association requires great care due to the high risk of missing files and incorrect combinations of bidirectional results. For example, a 144 fiber cable commissioning at 1310/1550 nm requires the storage, manipulation, and association of 576 files.

Having access to the directory contents of the files listed, is a great help in the automated association process. Once selected, information detailing missing results and incorrect trace associations, assists the user in developing an overview of the process. Instantaneously, these errors are highlighted for immediate research. The erroneous data is detected early, before the generation of the report, thereby saving time.



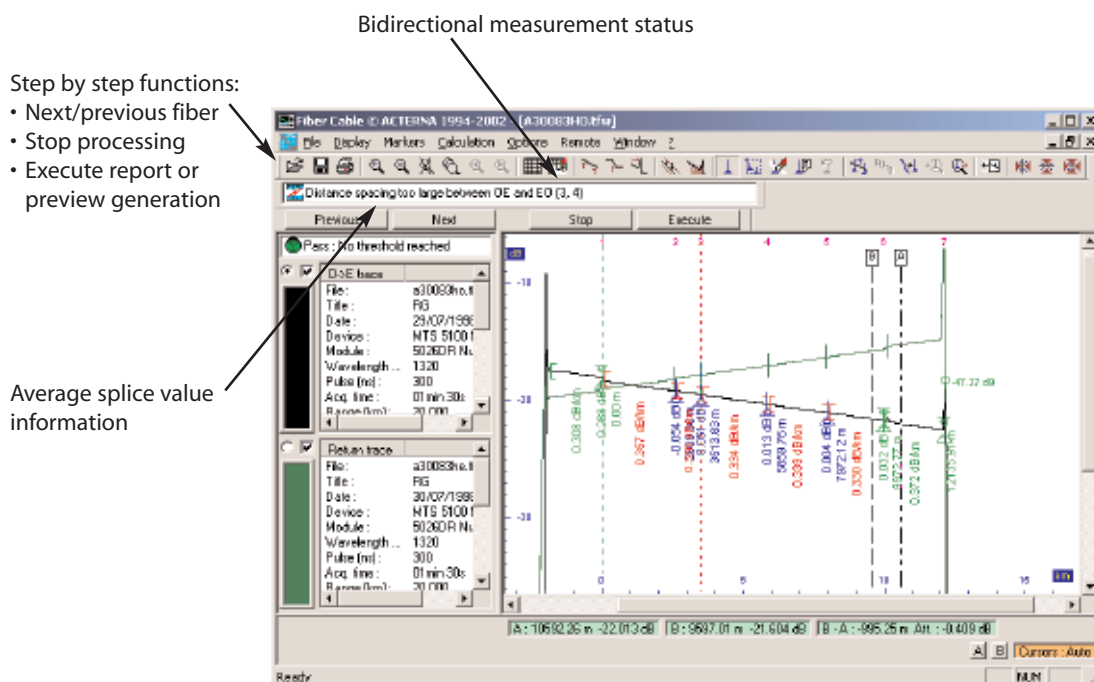
Using a template application blinds the operator

New generation OTDR Report software allows a template (bidirectional measurement reference) to be copied to other fibers in the cable. This is one of the most impressive time savings in the generation process. The template feature, however, creates the most important risk of measurement errors since the operator does not have access to the measurement results for each fiber. Due to this risk, an update of the bidirectional analysis status, for each fiber, is mandatory. The status offers a quick look at all the bi-directional analysis data, and prevents any incorrect results from appearing.



Manual measurement errors – step by step access

For close events or short distances, the user must adjust the results manually before performing the measurements. During the automatic generation of an acceptance report, with close events or manual measurements, variations can appear from one fiber to the next, due to differences in distance, cursors, or marker locations. In order to avoid any incorrect results, or even non measurements (final result tables not fully completed), the user should have access to any traces using a step by step process to check the measurements of each fiber as required.



Final stage – Overall result check before generation

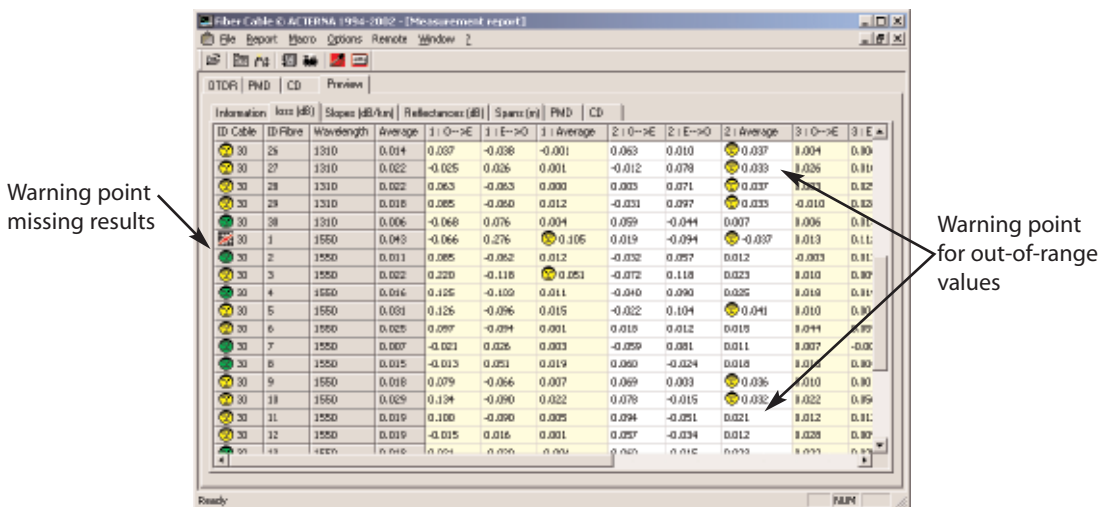
A final check point avoids any incorrect results and missing values. This final stage requires an overall result check, in order to clearly identify out of range values and inaccurate results, before the final generation of the report.

Out of range values

Before generating the final report, it is important for the customer to pinpoint the out of range values and identify the origin of such results - Is it the true splice value or a manipulation error? The report preview function provides a complete and quick overview of the results including warning points and dedicated information. These reports highlight inaccurate values and, due to direct access to the OTDR traces, the operator can validate or adjust the results as needed.

Missing measurement values

This overall check-in locates incorrect measurements, according to the dedicated result table, and displays a warning icon associated with the default value. The operator receives the final confirmation of the validity of results prior to report generation process and printout.



Macro and micro-bending overview

Macro and micro-bending either increases the splice loss or creates additional point loss within the fiber section. Such phenomena have to be pointed out in the final report for any further investigation. In order to avoid any re-work of the report generated, the direct OTDR trace access, via the report preview, enables immediate measurement adjustment for bending compensation in the final report.

Conclusion

Bidirectional OTDR report generation is not an easy task, even with the introduction of fully automated software packages. A number of check points are required, and the user must be experienced, in order to avoid the inclusion of incorrect results in the final report. Consequently, automated reporting software must include, not only automated processes, but also step by step access in order to offer a combination of speed, accuracy, and reliability!

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