

# Liberty Global

**Customer case: how we helped Liberty Global UK transition from manual ByteBlower GUI testing to automating every network traffic test.**

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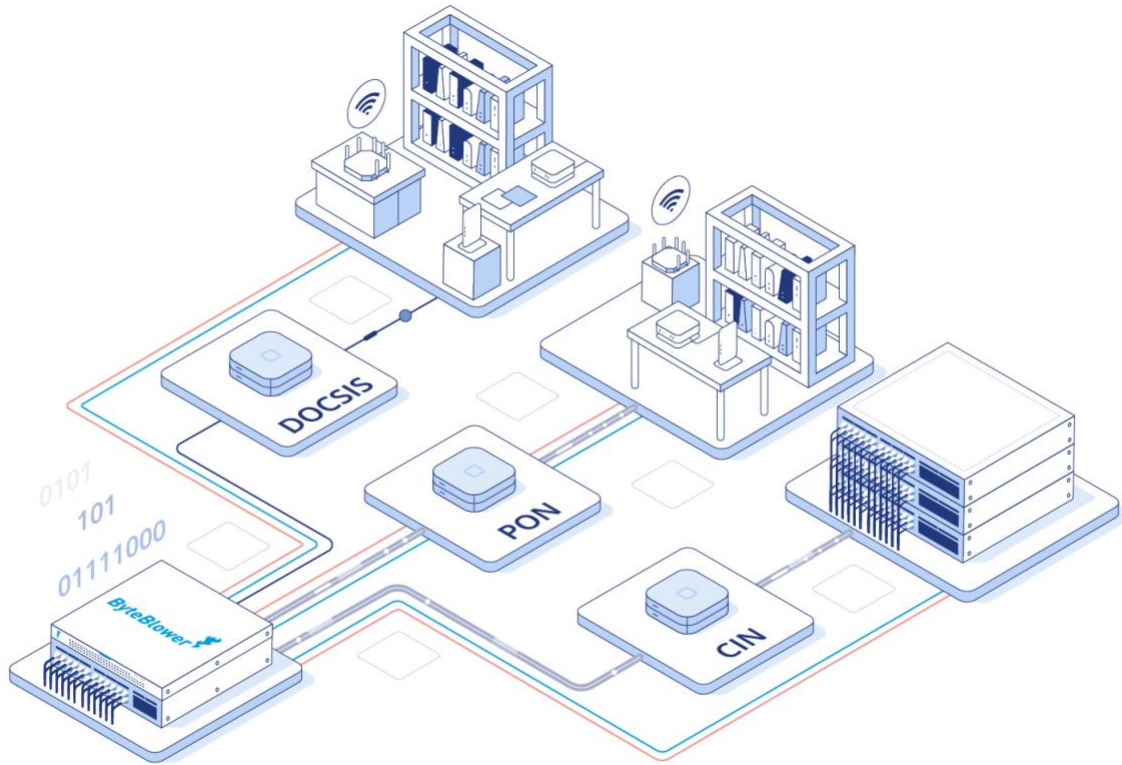
## Testimonial

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*To solidify our promise and service in delivering new access technologies for our customers, we upgraded to automated testing, enabling us to continuously test and validate solutions at scale for our entire access network. Excentis not only assisted in the integration of the ByteBlower, but also played an essential role in designing and implementing our new test framework and architecture, integrating into GitLab. This flexible setup helps us to quickly identify problematic changes in the network, be it hardware, software, or changes in configurations, and allows us to respond rapidly and comprehensively.*

*Seamus Gallagher, VP Access Network, Liberty Global*

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## Future proofing access network testing for Liberty Global: upgrading from manual to automated testing

### Future-proof access network test automation for Liberty Global

Moving from manual to automated network testing is no small feat. [Liberty Global](#), one of the world's leading converged video, broadband and communications companies, asked us to design and assist in the automation of their UK-based access network testing. This brings them a significant step closer to their mission: playing a vital role in the transition towards fiber-based and 5G networks.

**About Liberty Global**

Liberty Global is a world leader in converged broadband, video and mobile communications, with operations in 6 countries and headquarters in London, Amsterdam and Denver. Currently providing over 86 million fixed and mobile connections, and readying its networks for 10 Gbps and beyond, Liberty Global aims to be a frontrunner in the transition towards fiber-based and 5G networks.

**Upgrading from manual to automated testing**

Liberty Global aims to solidify their reputation, promise and service of **offering high-quality internet connectivity** to their subscribers.

Their next-gen engineering department initially focused on DOCSIS deployments, with **manual testing** using ByteBlower covering all bases.

With the advent of XGS-PON and other network technologies, the need to test every small change in their network, be it new hardware or software, or a change in configuration, demanded an automated and more thorough approach. Manual testing quickly became too **error-prone, a big time-waster and no longer viable**.

**Automating network testing**

In 2022, Liberty Global UK reached out to Excentis to **automate access network testing**. The goal of this project was threefold:

1. Build a framework for automating traffic generation and analysis.
2. Provide expert guidance in designing and optimizing the test architecture (structure, packaging, code reuse).
3. Allow automated execution of the tests through integration in a CI/CD/CT platform, in this case [GitLab](#).

**6 steps to automate these network tests**

“We didn’t just dive head-first into this project,” explains Tom Ghyselinck, Principal Engineer at Excentis. “Instead, we first described the whole process in a Statement of Work with clear deliverables for each iteration. This allowed us to find the best approach for fast and reliable integration of ByteBlower into their test automation, embedded in GitLab from the start.”

In co-creation with the Liberty Global team, we created a **6-step road to success**:

1. **Case discussion** with all stakeholders: test engineers (end users), Liberty Global project leads, Excentis project leads, and ByteBlower test developers:
  - a. What does Liberty Global want to achieve?
  - b. How can Excentis and Liberty Global cooperate?
  - c. Which are the priority outcomes?
  - d. How can we optimize the co-creation to minimize delivery times?
2. **Research**: selecting the right automation tools.
3. **Base implementation**: PoC of end-to-end test, from configuration file to report, ran on GitLab.
4. **Extension**: An iterative process, adding more features to the test.
5. **Complete configuration-driven test definition**: Full test definition via configuration file (number of DUTs, number and combination of traffic streams/patterns and analysis).
6. **Additional reporting formats**: JUnit XML, HTML, JSON.

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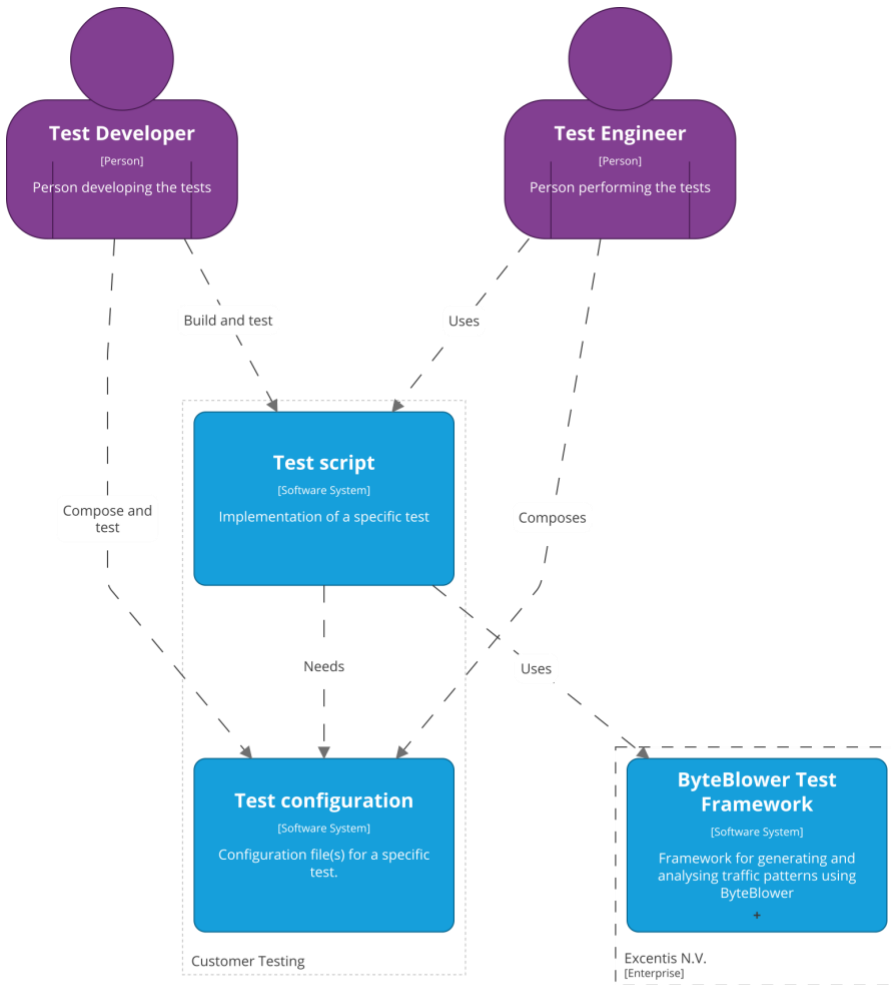
*“Excentis' agile approach and solid preparation allowed us to quickly adapt to changing circumstances and obstacles along the way. This was proven once again during succeeding development of our low latency DOCSIS test automation.”*

*Mirko Matic, Access Network Engineer*

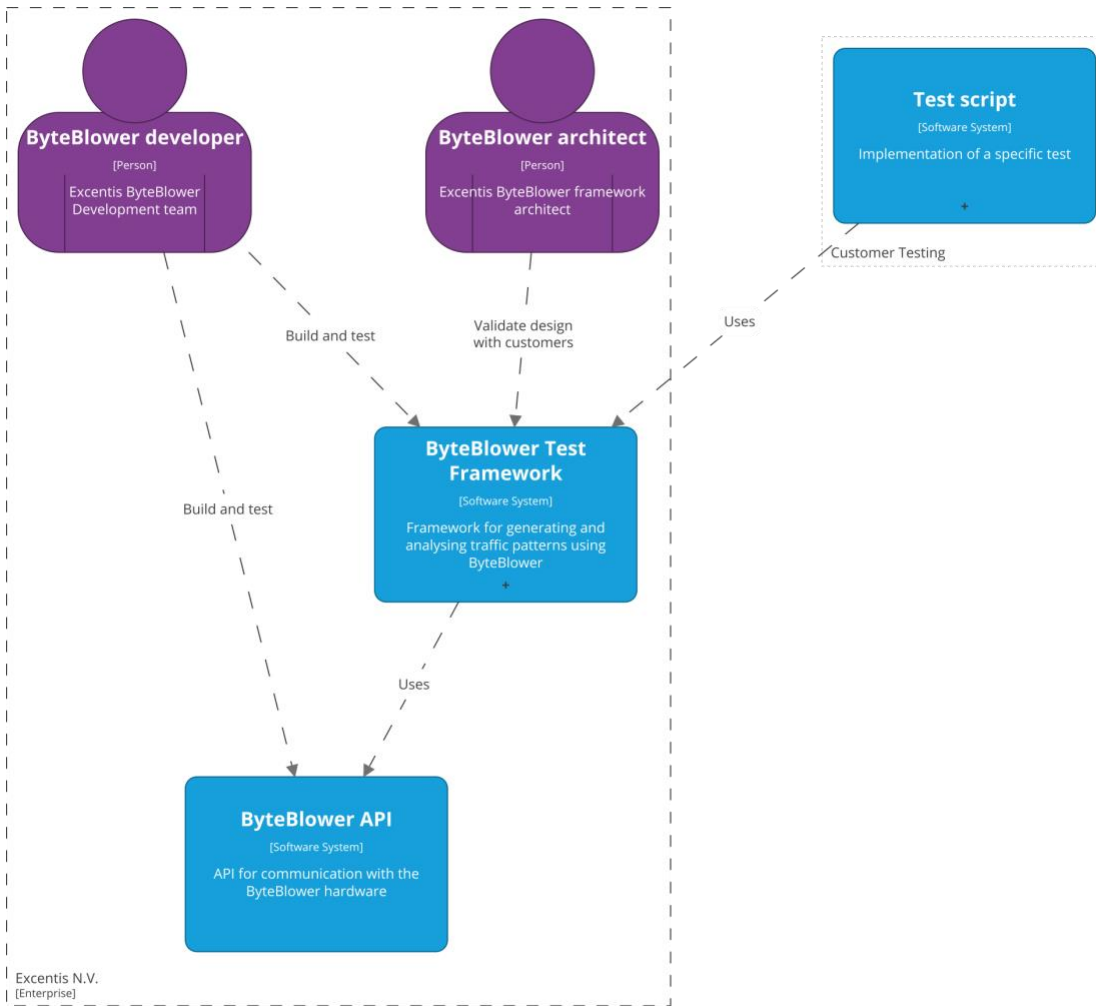
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Increasing network testing efficiency “Access network testing at Liberty Global is now a lot more efficient than before,” says Graham Bell, Senior Manager Next Generation Platform Engineering. To run automated tests, the **test engineers** only need to build the configuration files and schedule a test script with that configuration. From now on, the automation platform is responsible to run the test. The engineers can now focus on issues that really matter, leading to a faster deployment of the changes in their access network. The **test developers** are responsible for maintaining the test scripts in order to provide all the relevant test features that the test engineers require to run their tests.

The test scripts control the test equipment used (e.g. CMTS, CM configuration files, noise generators). The test developers can create test scripts using the **ByteBlower Test Framework** to easily automate the setup and analysis of network traffic.



Concept: Liberty Global view



Concept: Excentis view

## How increasing network testing efficiency makes a huge difference

All users and stakeholders of this new situation are excited about:

### 1. A smooth point-and-click experience for the test engineers

- Minimal configuration parameters
- Easily accessible and post-processable reports
- Integration with issue trackers, monitoring, etc.

## 2. Ease of use for test developers and maintainers

- Different easy-to-use building blocks
- Each with their own clear responsibilities

## 3. High reusability, (much) lower cost per test

- Re-sign basic traffic test implementations results in a big decrease in effort
- Add features or optimize all in one place: test scripts can immediately use and apply!

## 4. Different access levels

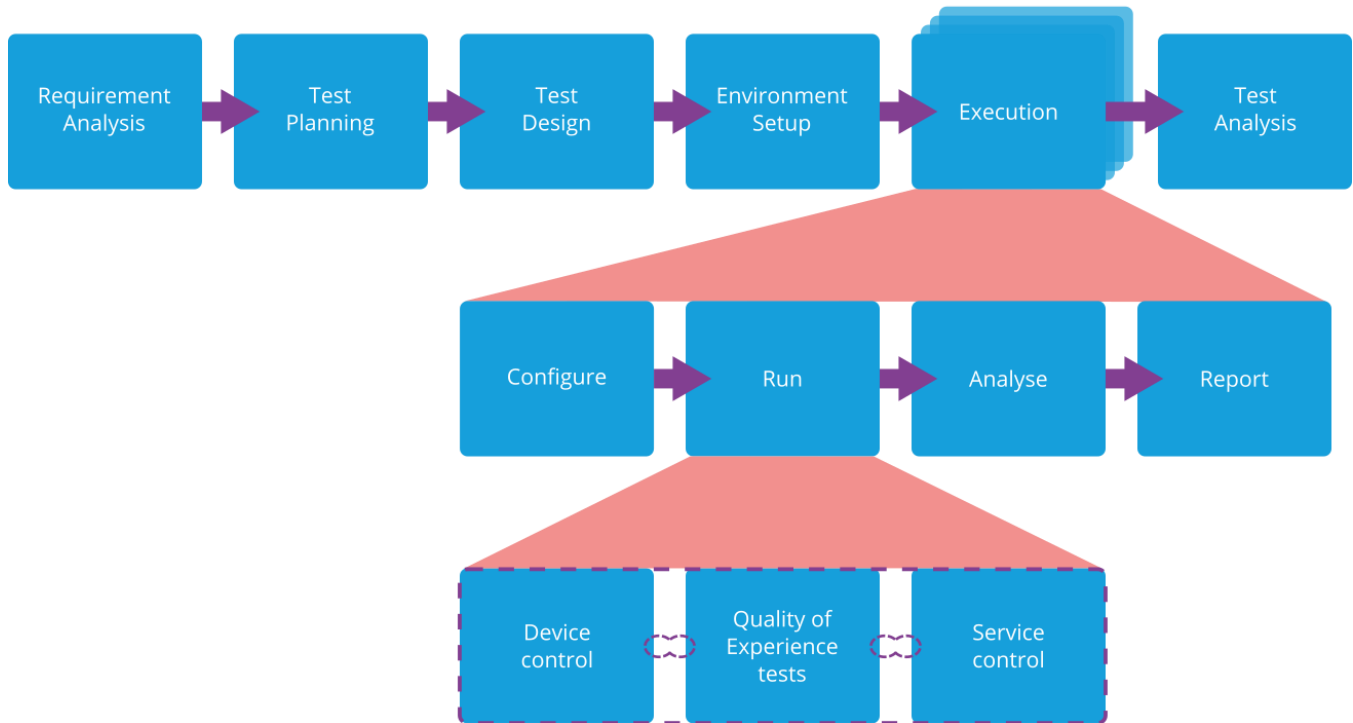
- Have read access to what you re-use
- Have write access to what you develop
- Have review access to where you contribute

## 5. Powered by community

- Liberty Global has access to updates from other projects to empower theirs!



## Test Lifecycle Management



### Ready for the future!

“The integration project provides **a solid foundation for future improvements,**” concludes Graham Bell at Liberty Global. “At every level of the test architecture, we now have reusable building blocks that allow for quick and easy adoption of existing and new tests in the future. Moreover, automation can be integrated into an orchestrator, which links issue tracking with test execution. That helps us save considerable time, while ensuring higher-quality results. The latter is, of course, key, as it helps us achieve our mission: ensure the fastest, most secure connectivity to enable our customers to thrive.”

*“Thanks to Excentis, we are one step closer to achieving our mission: ensure the fastest, most secure connectivity to enable our customers to thrive.”*

*Henna Maatta, Senior Project Manager*