



Creanord providing a peak performance view across 5G transport network in *the Middle East*

Customer Case

Customer Introduction

- One of the world's most advanced service providers with 5G network in commercial use
- ▽ Sells and delivers innovative mobile, wireless and fixed Internet access complemented with cloud services
- A large customer base of 140+ million customers globally
- Focuses on consumer, business and carrier's carrier business

The Middle East – forerunner in mobile

The Middle East is a very advanced and interesting market in mobile communications from a global and local perspective. For instance, the United Arab Emirates is the second to Singapore in smartphone adoption, with smartphones accounting for 85 percent of total connections. What comes to new technology adoption, the Gulf Cooperation Council (GCC) for the Arab States of Gulf, is set to be one of the global leaders in the deployment of 5G networks. In fact, 5G is almost business as usual in the Middle East already today.

High mobile broadband usage with 3G and 4G and introduction of 5G were also focal points for this service provider, one of the most significant players in the Middle East. Besides its mobile services to a massive customer base, the customer delivers managed business services to enterprise customers.

Seeking for better confidence on the network quality

The explosion of data services and continuous traffic growth in transport networks started to concern the operator, who wanted to ensure that their promise of great customer experience remains as a competitive benefit. The customer's perception was that their visibility to network performance and quality, which directly impacts all services, should be better than what they were achieving at that time.

The customer had already experience from a specialized performance monitoring system, which was used in core network. Extending the same solution into mobile transport was not a realistic option due to technical gaps and inconvenient commercial model, where every single usage change was priced and controlled separately.

Mobile transport performance monitoring for 4G and 3G was the first priority to get fixed. As 5G was in the near-term agenda, it was natural that the same solution would need to extend to 5G transport as the next step. Performance monitoring and SLA management for managed business services was another area to be soon covered with the same system.

The Creanord fit for customer needs

After the evaluation, the customer was impressed with Creanord solution and convinced that it truly fills the gap they had before in the network quality assessment. The customer considered the Creanord solution outstanding because of the following reasons:

- Accurate and reliable to unveil emerging issues in the network
- Scalable for the future growth
- Great economical fit
- Flexible integrations to existing tools and processes

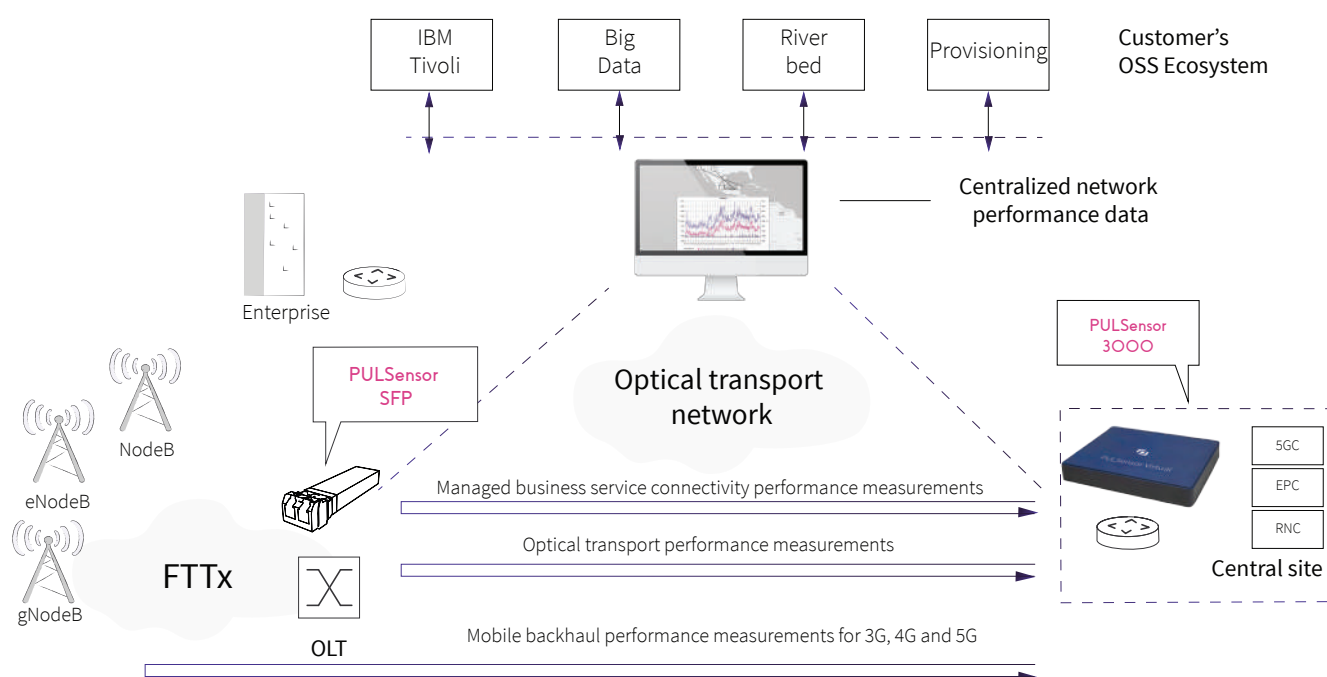


Figure 1 Creanord solution for mobile transport and business services performance monitoring

Initially, the performance monitoring with Creanord was deployed for 3G, 4G and 5G backhaul, where the last mile access was based on FTTx technology. Managed business customers' service monitoring was planned being the next phase.

Actual deployment contains a number of PULSensor 3000 probes, which continuously measure connection quality towards a large and growing number of 3G, 4G and 5G base stations from multiple vendors. Additionally, the customer wanted segmenting the measurements to get visibility to optical core transport part. Therefore, additional measurement points were added to the OLT devices using Creanord's compact CreaSFPs.

This gives the customer a precise view on the network performance in different network and technology areas, where organizational responsibilities differ. Current measurements make use of TWAMP protocol, which can measure all the critical network quality related metrics including latency, jitter and packet loss. The PULSensor 3000 initiates all the TWAMP measurements and tests the connections against base stations, managed business customer routers and PULSensor SFPs at the OLT sites.

One of the specific demands for performance monitoring and testing was VRF support. The use of VRFs was a part of the central site resiliency implementation, where routers and switches are duplicated and different traffic streams need to be separated into different VRFs. With this set-up and the Creanord solution, the customer can test connections separately through alternative routes. Managed business customers' service monitoring uses the same technology and products from Creanord. The PULSensor 3000 probes measure the quality of the connectivity sold to the customer site and PULScore stores measurements and analyses and processes them further into SLA metrics.

Stellar scalability for growth – technically and economically

Scalability was another important aspect for the customer, since there is an expectation to monitor even 400 000 connections with the same system. It is obvious that monitoring needs grow and go deeper. With that the system should not be the limiting factor for growth. The amount of monitoring sessions is not only a subject of new base stations or customer routers, but an evident need to monitor connections at different quality classes. While this calls for technical scalability, it could also impact the cost. With the Creanord solution, the customer appreciates the fact how Creanord enables to grow according to business needs without complicated licensing penalties which would kill the business case.

Flexible integrations to customer ecosystem and processes

The customer had already processes and tools set-up in place, which their operational people were familiar with and using on a daily basis. Therefore, it was important not to change the current processes but instead to be able to integrate the relevant information from Creanord system to the existing systems. Integration preferences were different between various interest groups and there PULScore integration flexibility became another key success maker.

Examples of systems where the Creanord solution is integrated to:

- Big data, which is consumed by multiple internal customers
- Riverbed, which consolidates performance and diagnostic from multiple systems
- Provisioning system, which automates provisioning
- IBM Tivoli, which is the umbrella fault management system

The ability of flexibly using e.g. REST, SQL and SNMP in different integrations was important not only for today's needs but also for the future.

Business partnership you value

Creanord has succeeded to exceed the customer expectations and the deployment keeps growing with the business towards hundreds of thousands of measured connections. The customer has been extremely happy with Creanord and its responsiveness with any of the product or business-related collaboration. According to them, this type of deep and trusted business partnership is not often achieved with vendors.

“ With large vendors product related communication is complicated. With Creanord, if we have any issue, it takes typically

two email exchanges

where the second confirms the issue is fixed

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Creanord Ltd
Pasilanraitio 9B
FI-00240
Helsinki, Finland

Phone: +358 10 309 3400
www.creanord.com
info@creanord.com

 <http://www.linkedin.com/companies/creanord>

 <http://twitter.com/creanord>