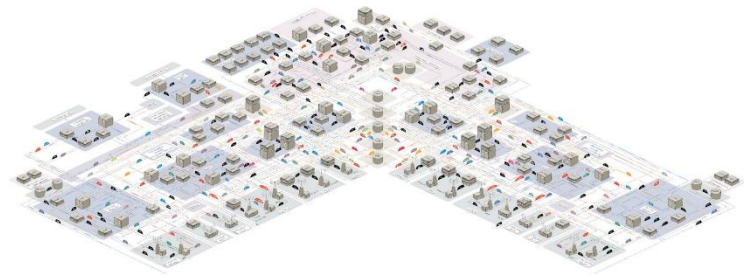# Case Study: How IMSI Filtering Simplified Troubleshooting for the CSP

Industry > **Telecom**

Challenge

To have better network visibility for troubleshooting and finding all signalling and user plane traffic of a specific user.

Solution

Cubro offered solution from layer 1 tapping, aggregation, load balancing to traffic correlation and IMSI filtering.

About the CSP

The communication service provider (CSP) is a leading provider of digital services and communications solutions in Central and Eastern Europe with more than 24 million customers. It is currently operating in seven countries across Europe and gives access to global solutions.

In Austria, the CSP encompasses approximately 5.5 million mobile communications customers and almost 2.3 million fixed access lines. The customers benefit from a global package of offers from one source: voice telephony, internet access, digital cable television, data and IT solutions, value-added services, wholesale services, mobile business and payment solutions. The CSP has approximately 18.000 employees and a turnover of over 4,2 billion dollars.

Organizational Challenges

The three main challenges faced by all service providers include retention of existing subscribers, driving better product offerings to new subscribers and conducting centralised monitoring and troubleshooting of the network. Better visibility into the user network traffic leads to higher level of customer satisfaction. In addition to providing excellent service to all the customers, the mobile network carriers also want to specifically focus on their top customers who bring them more revenue. This gives them a competitive edge in today's environment where subscribers can choose from several options.

The CSP wanted to have better network visibility for troubleshooting. However, due to the high traffic volume, the

monitoring of all user plane traffic did not make sense for the customer. And by law, it is not allowed without a specific order from authority or agreement of the user.

For troubleshooting, a full call monitoring/tracing is vital and requires both, signalling and user data of a specific customer of the mobile network.

There were three main challenges involved:

1. Finding all signalling and user-plane traffic of a specific IMSI, MSISDN or IMEI. The total traffic volume was several hundred Gbps, and the CSP uses a mixed technology - 3G & 4G
2. Security – There are strict rules to access data because it is highly sensitive information and therefore the CSP needed user agreement to activate monitoring (user support portal)
3. Scalability - Due to massive traffic growth scalability is a must and the CSP required solution which would accommodate the growth in traffic

Business Benefits

1. Increased ROI due to a highly scalable solution
2. Increased efficiency because of full solution from Layer 1 tapping to traffic correlation from a single vendor.
3. Reduced MTTR
4. Improved customer satisfaction

Technical Solution

Cubro offered the customer solution from layer 1 tapping, aggregation, load-balancing to traffic correlation. IMSI filtering solution correlates signalling and user plane and therefore provided the best solution for the issues related to troubleshooting.

The below image shows the deployment overview of Cubro products.
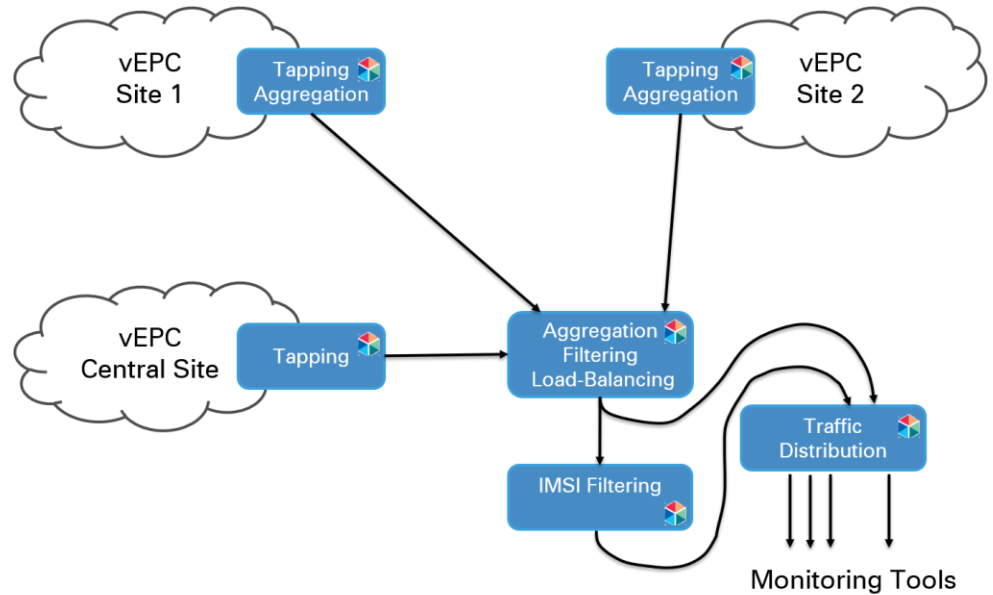
Cubro MTP TAP tapped the traffic and sent it to the Packetmaster EX20400 for aggregation. EX20400 aggregates all incoming vEPC traffic of site 1 and 2 (user and signalling) and load-balances it by means of five tuple hashing. The next steps included aggregation, filtering and load balancing. Cubro EXA32100 performed GTP Load-balancing based on the inner (user) IP address in order to distribute user traffic evenly to the IMSI filtering solution. Finally, IMSI filtering is done which is finding all signalling and all user traffic data that belong to a particular call. All the correlated packets are sent to an external analyser/probe.

Cubro also provided the customer with a central management software – Cubro Vitrum, which controls all the units. The advantages of the Vitrum include that it helps to keep configurations consistent, helps in the management of filter rules, is highly protected to avoid misuse and provides security logs.

The Cubro solution is highly scalable. In case of traffic growth, the CSP only needs to add EXA24160s to the existing network architecture. The solution was easy to use and straight forward to implement. It provides complete flexibility in terms of adding or removing probes/analysers without affecting any other device or operation. Cubro offers complete solution from layer 1 tapping to traffic correlation.

Business Benefits

The Service providers often get only one chance to deliver excellent customer service before the customer switches to the alternatives available in the market. Therefore, identifying the issues at an early stage for troubleshooting is extremely important.

Deploying Cubro devices provided the customer:

1. Increased ROI due to a highly scalable solution
2. Increased efficiency because of full solution from Layer 1 tapping to traffic correlation from a single vendor.
3. Reduced MTTR
4. Improved customer satisfaction

About Cubro

Cubro Network Visibility is a leading vendor of Network Probes, Network Packet Brokers (NPBs), Network TAPs, a partner of the world's largest telecom companies, and has installations in enterprises on all continents. We offer a full portfolio of network visibility products which can help organisations to gain insight into their network traffic.

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