

# Ericsson pioneers machine learning network design for SoftBank

- SoftBank Corp., a leading Japanese mobile operator, has used Ericsson's machine intelligence-based method for advanced radio network design in the Tokai region
- Compared to traditional methods, the new approach provided important benefits, for example shorter lead time and improved user experience
- Ericsson's centralized and elastic radio access network design is sold as a service and supports LTE networks

SoftBank Corp. ("SoftBank"), a leading mobile operator in Japan, has implemented an innovative method for radio access network design from Ericsson (NASDAQ: ERIC), based on machine intelligence. The service groups cells in clusters and takes statistics from cell overlapping and potential to use carrier aggregation between cells into account, thus reducing operational expenditure and improving network performance. Compared to traditional network design methods, it cut the lead time by 40 percent.

Ryo Manda, Radio Technology Section Manager at the Tokai Network Technology Department of SoftBank, says: "We applied Ericsson's service on dense urban clusters with multi-band complexity in the Tokai region. The positive outcome exceeded our expectations and we are currently proceeding in other geographical areas with the same method and close cooperation with Ericsson."

The foundation for the method is a thorough analysis of the actual radio network environment, for example taking cell coverage overlap, signal strength and receive diversity into consideration. The high number of possible relations between cells as well as considerations for network evolution, calls for substantial computational power and state-of-the-art machine learning techniques.

This highly complex task was a tremendous challenge that Ericsson solved by implementing a cutting-edge design concept based on network graph machine learning algorithm (community detection) that Ericsson has now patented.

Despite these challenges, SoftBank was able to automate the process for radio access network design with Ericsson's service. Big data analytics was applied to a cluster of 2000 radio cells and data was analyzed for the optimal configuration.

Peter Laurin, Head of Managed Services at Ericsson, says: "There is a huge potential for machine learning in the telecom industry and we have made significant investments in this technology. It is very exciting to see that the new methods have been successfully applied in SoftBank's network.

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There is a strong demand for this type of solutions and deployments of this service to other tier-one operators in other regions are ongoing.”

Ericsson is combining extensive radio networks competence with the latest machine learning advances to provide a key differentiator for customers on the road to automation. To support Ericsson’s global strategy to bring machine intelligence into different streams, Ericsson Network Design and Optimization is running an Artificial Intelligence Accelerator Lab, hosted in Japan and Sweden, looking to develop these use cases.

Ericsson’s centralized and elastic radio access network design method is sold as a service and supports LTE networks. Learn more about the method and offering at [Ericsson Network Design and Optimization](#).

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