

# **How to solve base station communication anomaly**





## Overview

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Can a fake base station avoid detection?

Similar to many other detection-based schemes, there can be a fake base station that can avoid detection, i.e., it is not detected as a faulty base station, but that would result in the attacker reducing its availability threat impact and releasing the connectivity setup.

What is a faulty base station vs a fake base station?

We varied the base station implementation to simulate legitimate vs. faulty but legitimate vs. fake and malicious base stations, where a faulty base station notifies the user of the connectivity disruption and releases the session, while a fake base station continues to hold the session.

Can a fake base station exploit a randomized selection?

The fake base station cannot exploit the randomized selection to make the user equipment connect to it with 100% 100 % probability. An attacker can attempt to launch a threat beyond just availability and disrupting the connectivity, such as attempting to make the victim user equipment connect to a fake server.

What happens if a base station is faulty?

The faulty base station establishes a radio connection with the user equipment and releases the connection afterward due to the worst channel conditions. Because our reference values come from the worst channel conditions, the optimal thresholds hence ensure fake base station detection with zero false positives under varying network conditions.



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### Anomaly Detection

The First base station has reached anomaly score values close to 0. Consequently, the second base station is detected doing the work of two at once, transmitting twice the amount of calls ...

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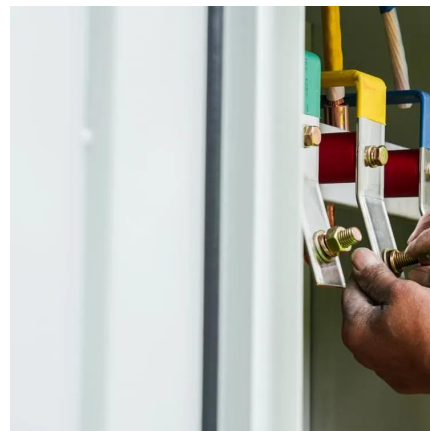


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