



FTMRS SOLAR

# Madrid Communications 5g base station detection





## Overview

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How does 5G protect users from false base stations?

The framework complements other mechanisms introduced in 5G to protect users against false base stations, for example encrypted long-term identifiers and fresh short-term identifiers. This blog post outlines the framework and describes some practical experiments we have performed in our lab. Strategic Product Manager, RAN Security.

Can mobile networks detect false base stations?

SA3 has described a solid framework based on this information, enabling mobile networks to reliably detect such false base stations. The framework complements other mechanisms introduced in 5G to protect users against false base stations, for example encrypted long-term identifiers and fresh short-term identifiers.

Does 5G work if a base station is fake?

We empirically validate that the 5G connection works well when the base station is the legitimate base station. Against a fake base station, we implement enabling vs. disabling our scheme.

Can a 4G network detect a false base station?

The setup, shown in Figure 3, uses base stations of two network generations, 2G base stations called BTS, and 4G base stations called eNB. The purpose is to verify that a 4G network can be used to detect both 4G and 2G false base stations.



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Anomaly Detection Against Fake Base Station Threats Using ...

Nov 2, 2025 · The mobile cellular network (4G/5G) relies on a base station, which serves as the bridge gateway between the wireless and wired communications. Fake base stations with ...

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A Study on the Implementation of a Network Function ...

Mar 30, 2024 · Abstract The threat posed by false base stations remains pertinent across the 4G, 5G, and forthcoming 6G generations of mobile communication. In response, this paper ...

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Low Altitude Target Detection Technology Based on 5G Base Station

Feb 19, 2021 · This scheme using 5G base stations as radar transmitters, 5G signal as radiation source, set up the receiver receives the forward scattering signals from the target in order to ...

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5G Native Network Function for False Base Station Detection ...

Jun 5, 2025 · Despite its potential to support advanced vehicular connectivity, 5G systems are still vulnerable to false base station attacks.

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The Applicability of Macro and Micro Base Stations for 5G Base Station

Oct 14, 2022 · The construction of the 5G network in the communication system can potentially change future life and is one of the most cutting-edge engineering fields today. The 5G base ...

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5G Native Network Function for False Base Station Detection ...

Jun 5, 2025 · The Fifth-Generation (5G) technology is increasingly recognized as a key enabler for V2X applications, although large-scale commercial deployments remain in the early stages. ...

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5G Native Network Function for False Base ...

Jun 5, 2025 · Despite its potential to support advanced vehicular connectivity, 5G systems are still vulnerable to false base station attacks.

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5G Multi-Base Station Optimal Deployment for Communication ...

Dec 19, 2021 · To detect illegal unmanned aerial vehicle (UAV) while guarantee the communication quality simultaneously, an optimal deployment problem for 5G multi-base ...

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Detecting false base stations in mobile networks

Jun 15, 2018 · SA3 has described a solid framework based on this information, enabling mobile networks to reliably detect such false base stations. The framework complements other ...

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Gotta Detect 'Em All: Fake Base Station and Multi-Step ...

Jul 22, 2025 · Gotta Detect 'Em All: Fake Base Station and Multi-Step Attack Detection in



Cellular Networks Kazi Samin Mubasshir\*, Imtiaz Karim\*, Elisa Bertino

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Modeling information and communication interaction in 5G ...

Oct 1, 2025 · The research focuses on the processes of information and communication interaction between a set of subscribers and a base station in a 5G cluster. We...

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Advanced Optical-Radio Communication System for 5G Base Stations ...

Dec 26, 2024 · Abstract This research aims to create trustworthy, fast communication technologies for 5G and beyond. The design investigates the possibilities of Free-Space Optical (FSO) ...

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Fake Base Station Detection and Link Routing Defense

Sep 1, 2024 · Fake base stations comprise a critical security issue in mobile networking. A fake base station exploits vulnerabilities in the broadcast message announcing a base station's ...

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5G Native Network Function for False Base Station ...

Jun 5, 2025 · Abstract The Fifth-Generation (5G) technology is increasingly recognized as a key enabler for V2X applications, although large-scale commercial deployments remain in the ...

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Improving 5 G base station placement through precise rooftop detection

Jun 18, 2025 · The results demonstrate a significant improvement in detection accuracy, directly contributing to more efficient 5 G base station deployment in densely populated urban areas. ...

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Fake Base Station Detection and Localization in 5G Network ...

Jul 12, 2024 · Unfortunately, this scenario opens new security challenge against Fake base station, in which UEs can be at risk when transferred to these base stations. The aim of this ...

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Fake Base Station Detection and Link Routing Defense

Sep 1, 2024 · Fake base stations comprise a critical security issue in mobile networking. A fake base station exploits vulnerabilities in the broadcast message announcing a base station's ...

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