

# **Do 5g base stations use synchronous motors**





## Overview

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Do 5G networks need time synchronization?

Many of the commercial 5G networks going live around the world today use TDD. TDD radio frames inherently require time and phase alignment between radio base stations, to prevent interferences and related loss of traffic. Time synchronization is also required in FDD networks when different radio coordination features are used.

What is 5G synchronization & why is it important?

Proper network synchronization is a prerequisite to excellent radio network performance. Some of the most compelling use cases for 5G, including industrial automation, depend on more accurate timing and will likely generate additional synchronization requirements in the near future.

Does 5G change radio network synchronization requirements?

While the introduction of 5G did not cause any fundamental change to radio network synchronization requirements, some applications may put more stringent local accuracy requirements on the synchronization of the 5G nodes. Examples include time-sensitive networks (TSNs), smart grid applications and the UE device-positioning use case.

Why is 5G synchronization so difficult?

And there are other advanced technologies that come with 5G, like dynamic spectrum sharing (DSS), carrier aggregation and massive MIMO—all requiring good timing to operate correctly. These technologies give rise to complexities in network synchronization not seen in earlier generation networks.



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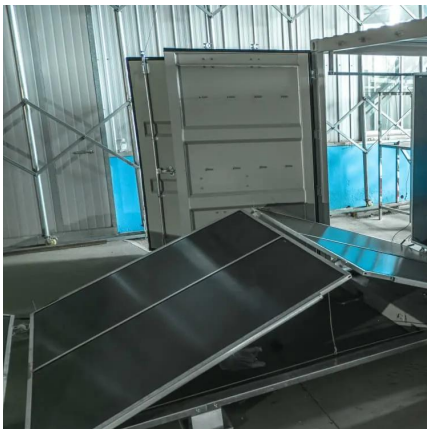
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Feb 11, 2025 · The infrastructure for 5G requires a dense network of cells and base stations, which can be expensive and require a long development time due to coordination between ...



### [Analysis of 5G synchronous networking architecture and key ...](#)

This article first analyzes the time synchronization requirements of 5G systems, explains the necessity of using terrestrial synchronous networking to solve 5G system synchronization, ...



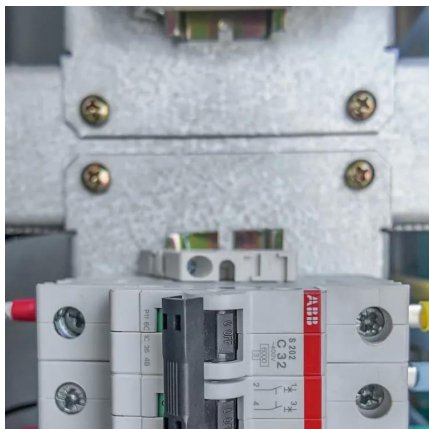
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### [5G synchronization requirements and solutions](#)

Ran-Based Synchronization SolutionsTransport-Based Synchronization SolutionsCombining Techniques For Best ResultsA solution is considered to be RAN based if it can fulfill the synchronization requirements of the RAN network without synchronization support from the transport network. The two main RAN-based solutions are GNSS-based synchronization and over-the-air synchronization (OAS). A GNSS-based solution installed directly at base station sites can provide See more on ericsson EXFO



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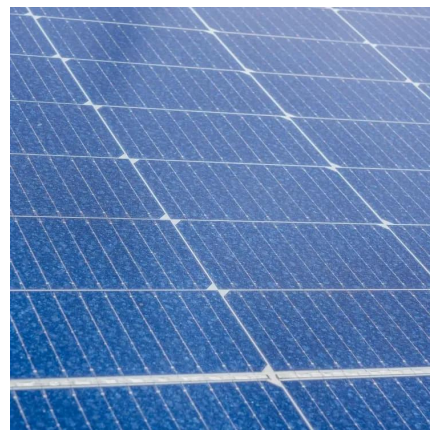


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