NSA (Non-Standalone):

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NSA refers to Non-Standalone 5G networks.

In NSA mode, 5G networks are built upon existing 4G LTE networks.

This means that 5G radio access is added on top of the existing 4G core network.

NSA allows for faster deployment of 5G services since it leverages the existing LTE infrastructure.

However, the full potential of 5G, such as ultra-low latency and massive IoT support, is not fully realized in NSA mode because it still relies on the LTE core network for certain functionalities.

SA (Standalone):

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SA refers to Standalone 5G networks.

In SA mode, the entire network infrastructure is built specifically for 5G from the ground up, including the core network.

SA enables all the advanced features of 5G, such as ultra-reliable low-latency communication (URLLC) and network slicing, without depending on LTE.

It provides better performance and scalability compared to NSA because it is not constrained by LTE architecture.

SA is essential for fully realizing the potential of 5G technologies across various applications, including industrial IoT, autonomous vehicles, and augmented reality.

In summary, NSA and SA in 5G describe different deployment modes where NSA uses existing 4G infrastructure for initial 5G rollout, while SA builds a new standalone 5G network from scratch for optimal performance and capabilities.