May 24, 2017 3rd Global 5G Event in Tokyo, Japan Deployment Plans Toward 5G Implementation

Deployment Plans Toward 5G Implementation

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Ph.1 WI:NSA(Non-Standalone) will be standardized in advance(1)

- Early 5G deployment may be possible by EPC-based NSA.
- 3GPP RAN meeting in March 2017 agreed to standardize NSA in advance to SA.



NSA(Non-Standalone) Arch. based on EPC

SA(Standalone) Arch. Based on 5G Core



Ph.1 WI:NSA(Non-Standalone) will be standardized in advance (2)

Comparison between NSA and SA



NSA(Non-Standalone, LTE Anchor)



SA(Standalone)

	NSA	SA
	Connection to both LTE and 5G mandatory	Can work by 5G alone (LTE not necessary)
Control (Location Registration)	5G will be focused on U-Plane alone, while LTE is used for control including call origination/ termination, location registration, etc.	5G will be used for both U-Plane and C-Plane
5G radio control parameters	5G radio control parameters will be exchanged through LTE. For that purpose, functions should be added to eNB.	5G radio control parameters can be exchanged through 5G.
Paging Channels	UE monitors paging channels on LTE.	UE monitors paging channels on 5G.

5G Deployment Scenarios

- Multiple architectures are under study at 3GPP, according to different 5G deployment scenarios of each administration.
- Multiple architecture options available depending on different combinations of Core (EPC, 5G Core) x SA (LTE, 5G) x NSA (LTE Anchor, 5G Anchor)





Example of Migration from 4G to 5G

EPC-based core configuration will be standardized in Rel.15 NSA while 5G core will be standardized in Rel.15.





Example of 5G Roadmap based on Standardization Schedule



Example of Frequency Bands Usage

Several frequency bands will be used separately or jointly depending the characteristics of the bands and use cases.

Area Coverage





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Illustrative Frequency bands utilization and 5G use cases Appropriate frequency bands will be chosen depending on needs and services.



Illustrative Frequency bands utilization

- ✓ 5G bands (Below 6GHz, Above 6GHz (ex : 28GHz)) should be used in combination with 4G to complement each other, taking into account the following factors:
 - ✓ Requirement of use cases (Mobility, Area, Latency, etc.)
 - ✓ Separation of C-Plane and U-Plane
 - ✓ Standalone, Non-Standalone scenarios





Importance of Multi-sites and Multi-bands technologies

- ✓ In order to compensate the blocking effect in higher frequency bands (ex : 28GHz), multi sites technologies (CoMP etc.) employing multiple base stations are important.
- ✓ Interwork with 4G frequency bands (Dual Connectivity, etc.) is also essential.





