IETF 97 – BANANA BoF

KT's GiGA LTE

- Mobile MPTCP Proxy Deployment

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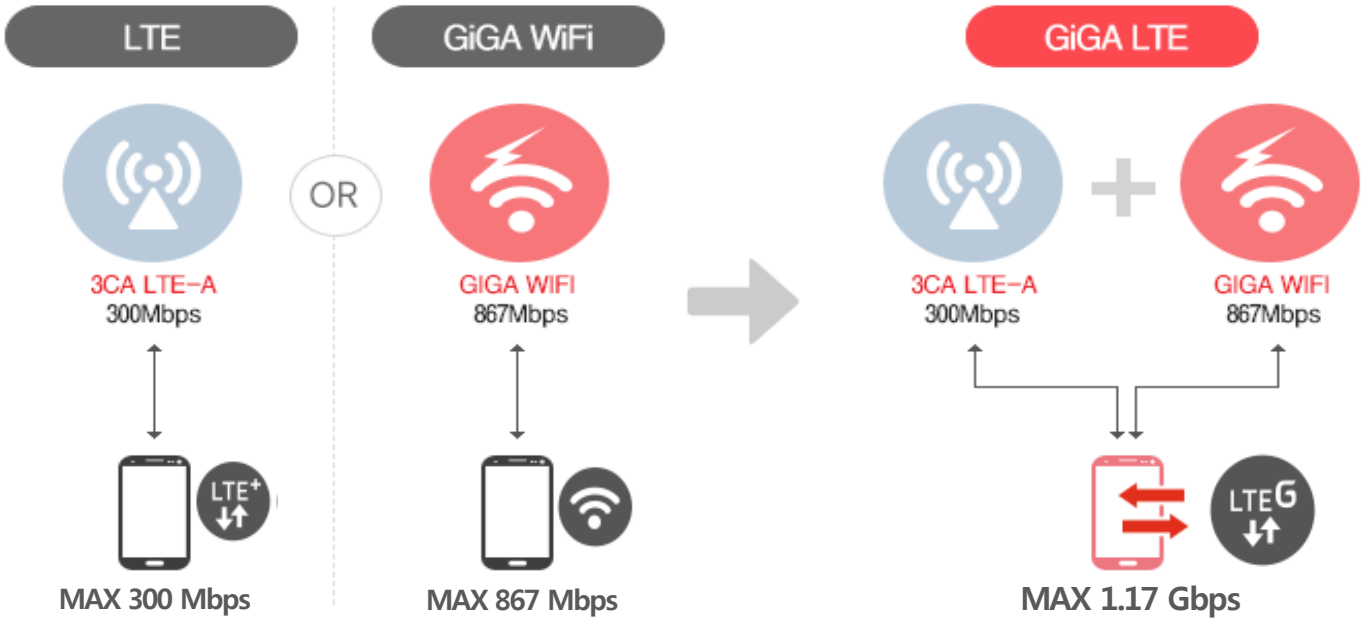
01 Updates

KT started launching mobile MPTCP proxy service in commercial since June 2015

- **GiGA LTE (a.k.a., GiGA Path, mobile MPTCP proxy)**
  - Premium service providing the fastest mobile data speed (theoretically LTE + WiFi combined giga bps)
  - Deploy mobile MPTCP proxy gateways w/ UE support (national-wide LTE/3G and public/private WiFi coverage)
  - Collaboration with handset vendors (Samsung and LG electronics) : now have 11 smartphone models in service
  - Technology transfer : exported to other country, e.g., Turk Telekom's "GiGA 4.5G" in service since Apr. 2016

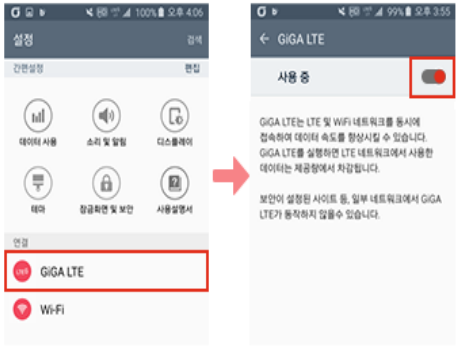


※ Theoretical maximum speed. it may vary according to network conditions.

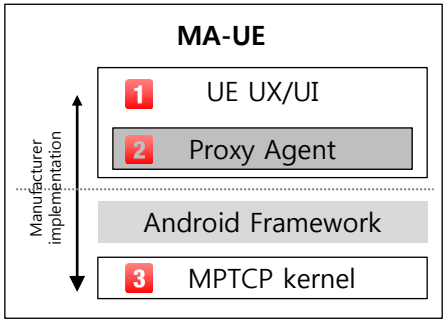
02 Deployment status

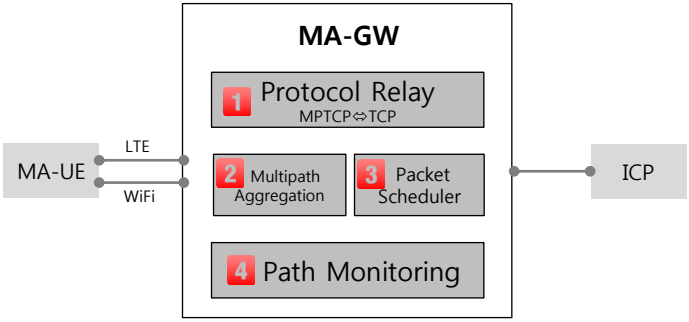
Both mobile MPTCP proxy gateway and UE are ready to work for every applications

- **Protocol and basic functionalities**
  - Ported MPTCP kernel v0.89 → v0.90 from multipath-tcp.org (compatible with MPTCP WG rfc 6824)
    - 2 subflows maintained per session : LTE for MP_CAPABLE and WiFi for MP_JOIN
    - Default packet scheduler with fullmesh path manager
    - Well known proxy protocol basis : SOCKSv5
    - UE's traffic redirected to the GW (both up/downlink, and UDP as well)
  - Turns on "GiGA LTE" button, that's all subscribers to do
    - All application using TCP works via mobile MPTCP proxy
    - Subscriber should have billing plan required for GiGA LTE service



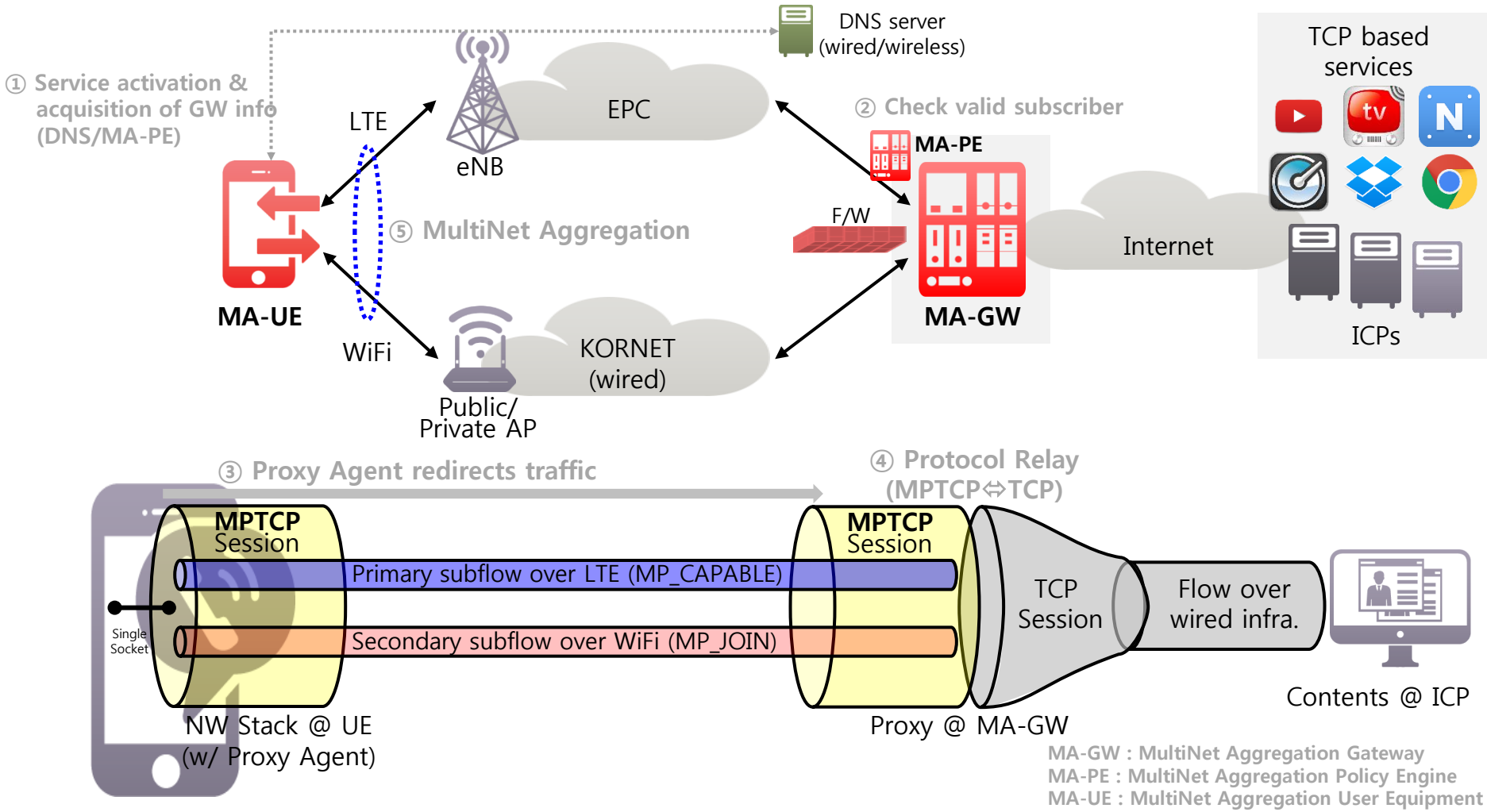
MA-UE (mobile MPTCP handset)	MA-GW (mobile MPTCP proxy gateway)
(1) UE UX/UI : service scenario, on/off GUI (2) Proxy Agent : traffic redirection to MA-GW (3) MPTCP kernel : support MPTCP/IP networking stack	(1) Protocol Relay : MPTCP-to-TCP session relayed forwarding (2) Multipath Aggregation : MPTCP based multi-net support (3) Packet Scheduler : scheduling packet according to nw env (4) Path Monitoring : detect and bypass when WiFi path going down





03 Mobile MPTCP Proxy System Deployment

How GiGA LTE works? Explicit proxy deployment model



MA-GW : MultiNet Aggregation Gateway
MA-PE : MultiNet Aggregation Policy Engine
MA-UE : MultiNet Aggregation User Equipment
ICP : Internet Content Provider

Thank you