Mobile Traffic Steering

draft-liebsch-dmm-mts-04.txt

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IETF#124 – Montreal, Canada

3rd November 2025

Topic background, objectives & status

Systems for mobile communication will demand for more flexible and controllable end-to-end traffic steering

Extend and complement control on mobile traffic steering from mobile communication systems (MCS) across transport network towards data networks

- Mobile traffic steering in advanced mobile scenarios discussed @IETF116; public side meeting @IETF117
- Past DMM WG contributions in this context summarized
- Room for documentation & standardization has been further elaborated
- Drafts published and updates discussed at and in between past IETF meetings
- 3rd revision of draft defines clear scope and inter-working options, use cases, deployment options and information model
- 4th revision addresses review comments and implements more deployment details

Draft structure

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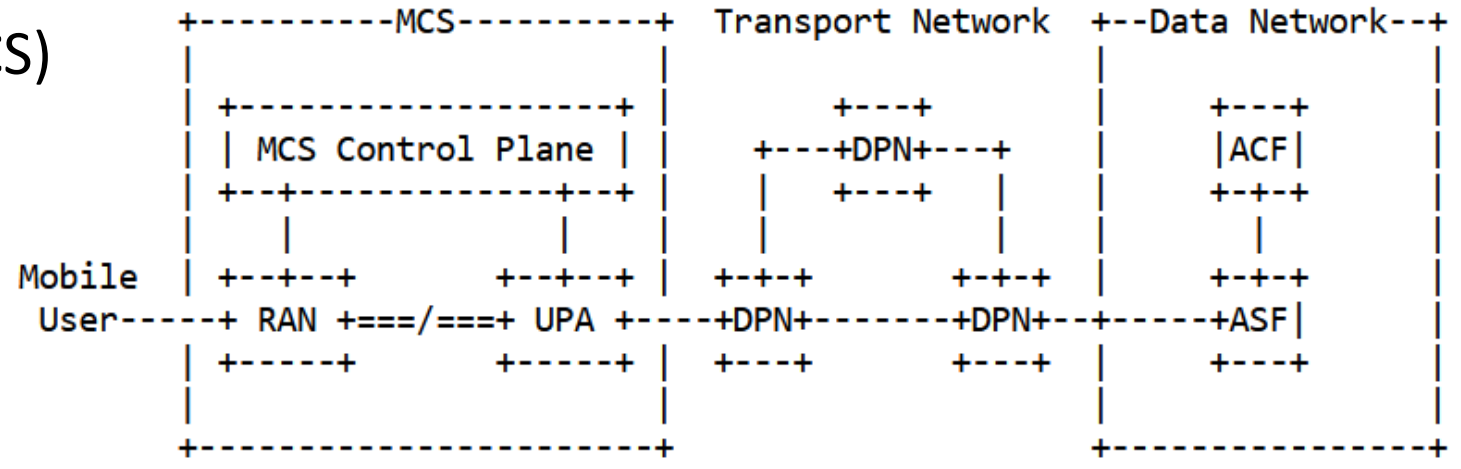
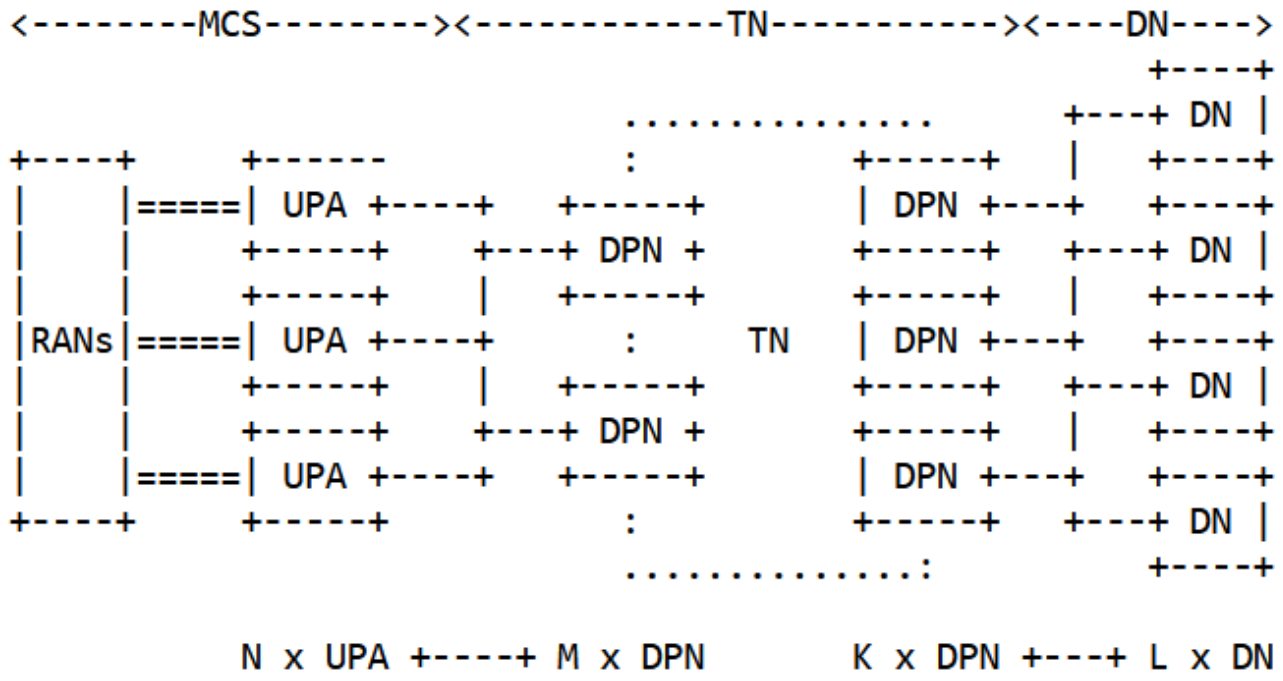
Reference end-to-end architecture

Mobile Communication System (MCS)
User Plane Anchor (UPA)
Data Plane Node (DPN)
Data Network (DN)
Application Service Function (ASF)
Application Control Function (ACF)





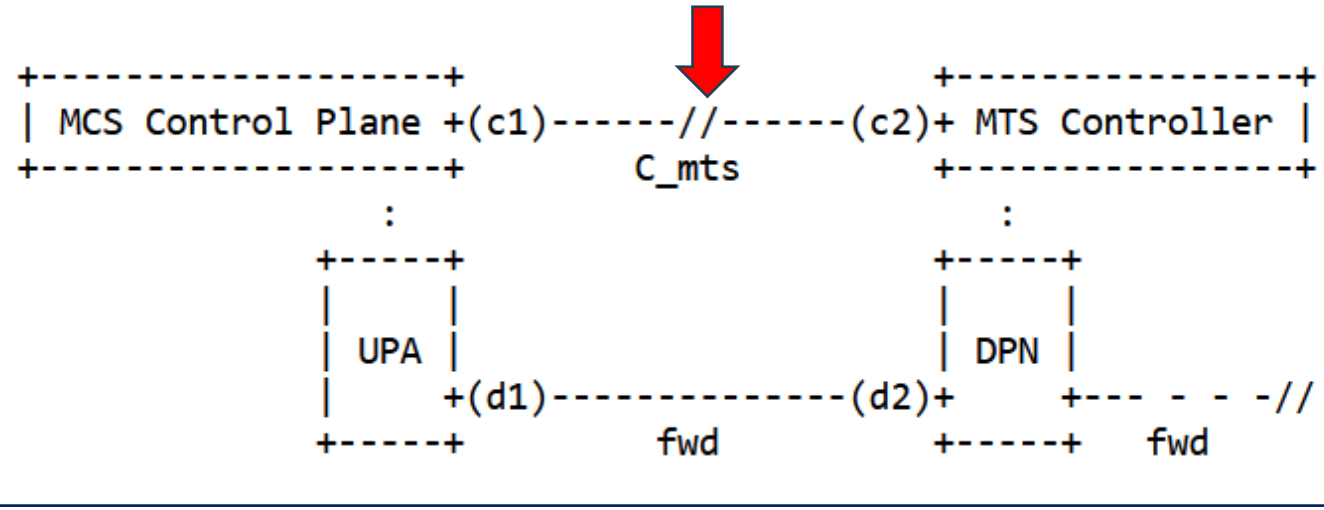
Flexible constellations between groups of UPAs, DPNs and Data Networks

Deployment options and applicable reference points

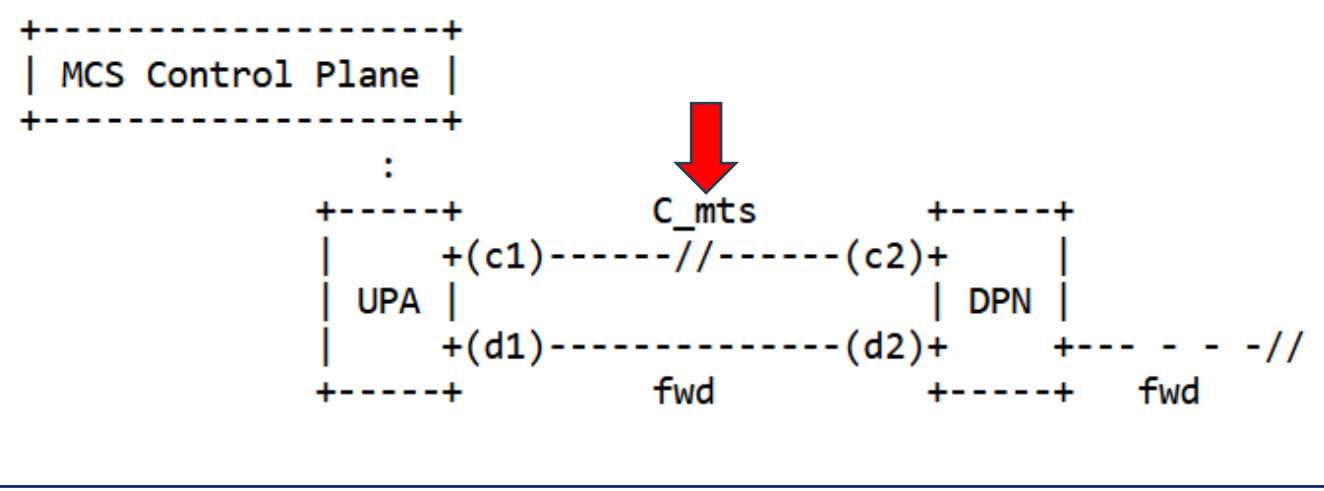
Draft specifies semantics on `C_mts` Control Interface, operations and Information Model

Applies between (c1) (c2) endpoints

Dedicated Control Plane



Decentralized Control Plane



Review comments addressed in v04

Many thanks to John Kaippallimalil for the detailed comments

- Value of the draft confirmed
  (´…*The draft identifies a gap/problem in 5G systems and the need to (re)select and steer flows… This draft can provide value and insight into a complex area*…´)
- Clearer differentiation of traffic treatment terms in the Introduction section:
  ´MTS-related traffic treatement´ and ´Advanced traffic treatments (metering, QoS, ..)´
- Early clarification about architecture priciples (dedicated controller vs. distributed control plane)
  - Clearer text in *Abstract* and *Introduction* why two principles are described and where the key differences are
    (´…*should be stated much earlier and described later for easier reading*…´)
  - Details about deployment options' pros/cons added to Sec. 5
    ('…*Between the different options what is the trade-off in terms of scale and complexity of provisioning/maintaining the paths?*…')

Review comments addressed in v04

- Sec. 4.2 MCS-proactive UPA relocation / Sec. 4.3 MCS-reactive UPA relocation
  - Clarified about proactive- and reactive role of MCS in use cases/scenarios section (´…“*Due to mobility, the MCS may relocate the mobile user's UPA from UPA1 to UPA2”: that would seem more reactive? …*´)

Clarified on mailing list

- (´…*does user mobility trigger steering, or does measurement on path trigger steering, or both?...*´)
- (´…*In case the user's IP address needs to continue only as long as the data session with ASF1 takes ..” How does UPA know how long the session lasts?...*´)
- (´…*Section 4.2 “In order to keep routing paths short and latency low, the ASF may be relocated from ASF1 to ASF2”. How does ASF /data network know how to do this?...*´)

Review comments addressed in v04

- (´…*Does MCS proactively relocate the UPA (UPA1 -> UPA2) based on some measurements of the path UPA1 – ASF1 and expect to have better performance after the move UPA2 -> ASF1?* ...´)
- (´…*Section 4.4: "A MCS provide may deploy distributed UPAs in order to shorten the route and resulting latency for the communication between two mobile users"* …´)
- (´…*Why is there a need to move UPA for shorter paths? Isn't it possible to have a routed network (with DPNs) that select the shortest/lower latency path etc.* …´)
- (´…*The problem seems to be that the UPA is not distributed enough (that one has to move from UPA1 -> UPA2 to get a shorter path to UPA3* …´)

Review comments addressed in v04 (cont‘d)

Open

- (´…*The draft has many terms like “flexible deployment”, dynamic re-configurability, complexity which can be understood in different ways*…´)
- 3GPP-specific or generic but aligned and applicable?

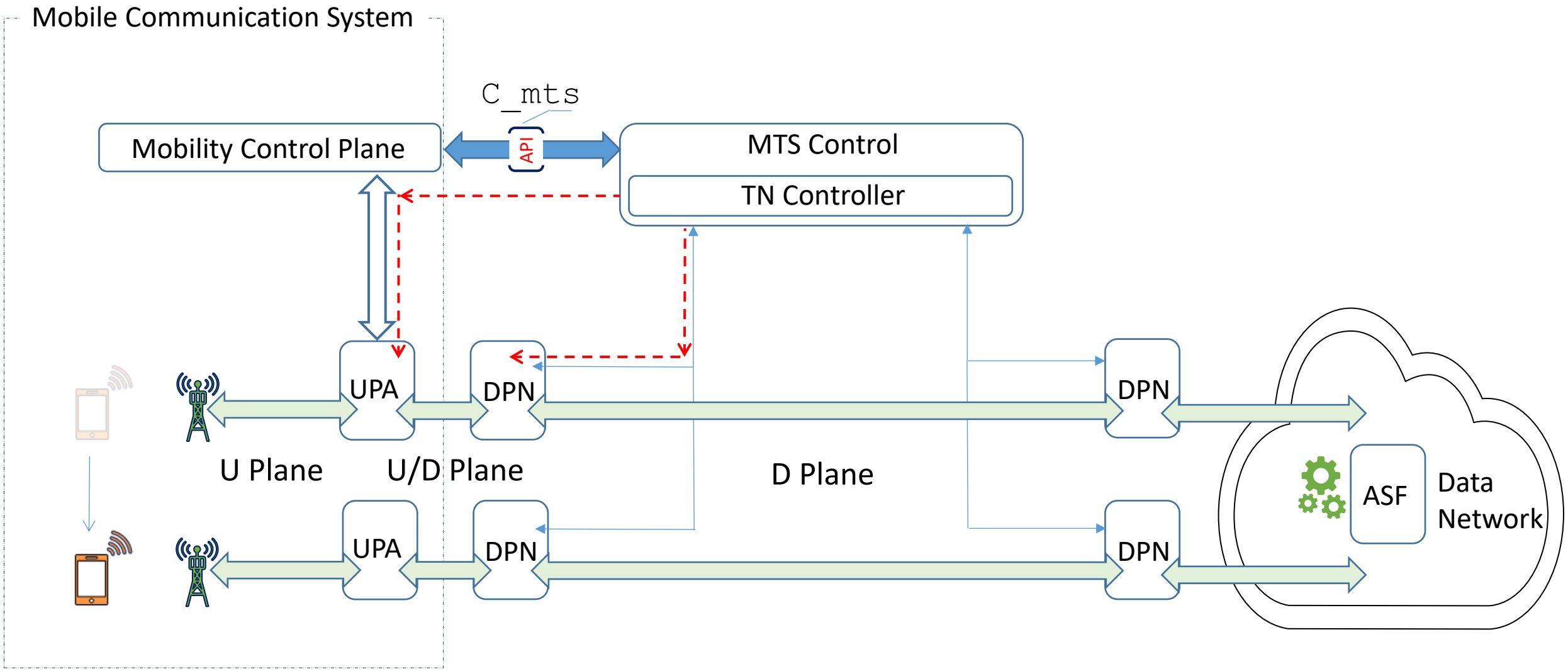
Next

- Extend operations section
- Unify format for Information Model

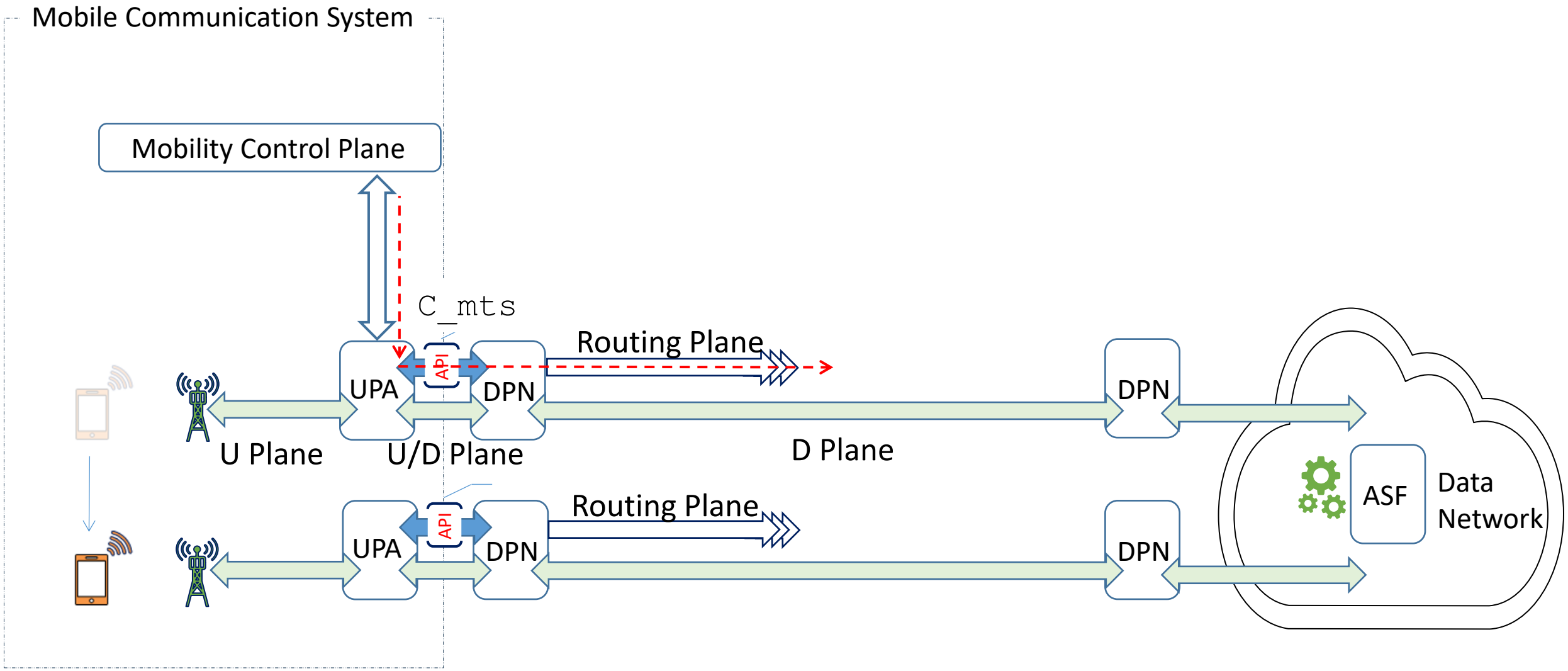
- Call for adoption as WG document

Appendix

Operational Mode I – Controller-centric operation



Operational Mode II – De-centralized operation



Operational Mode III – Hybrid operation