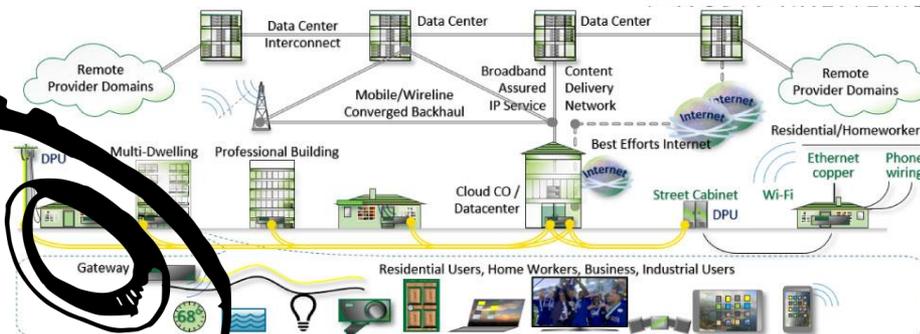
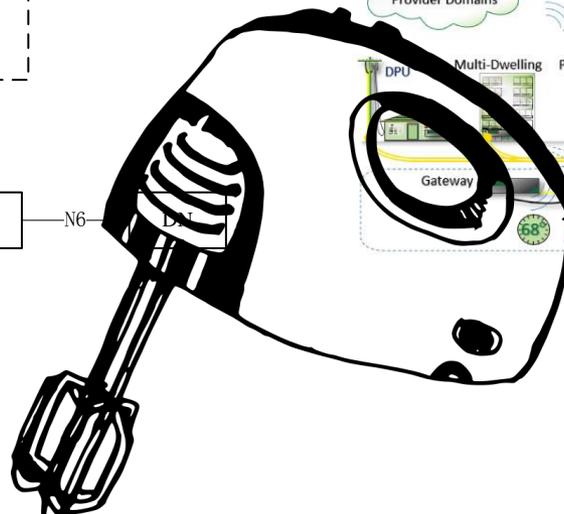
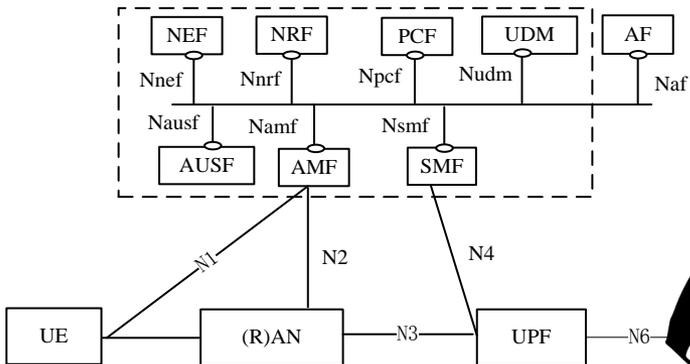




# Key Issues on supporting Wireline and Wireless Independent Core Network

Huawei

# What might be access independent CN?



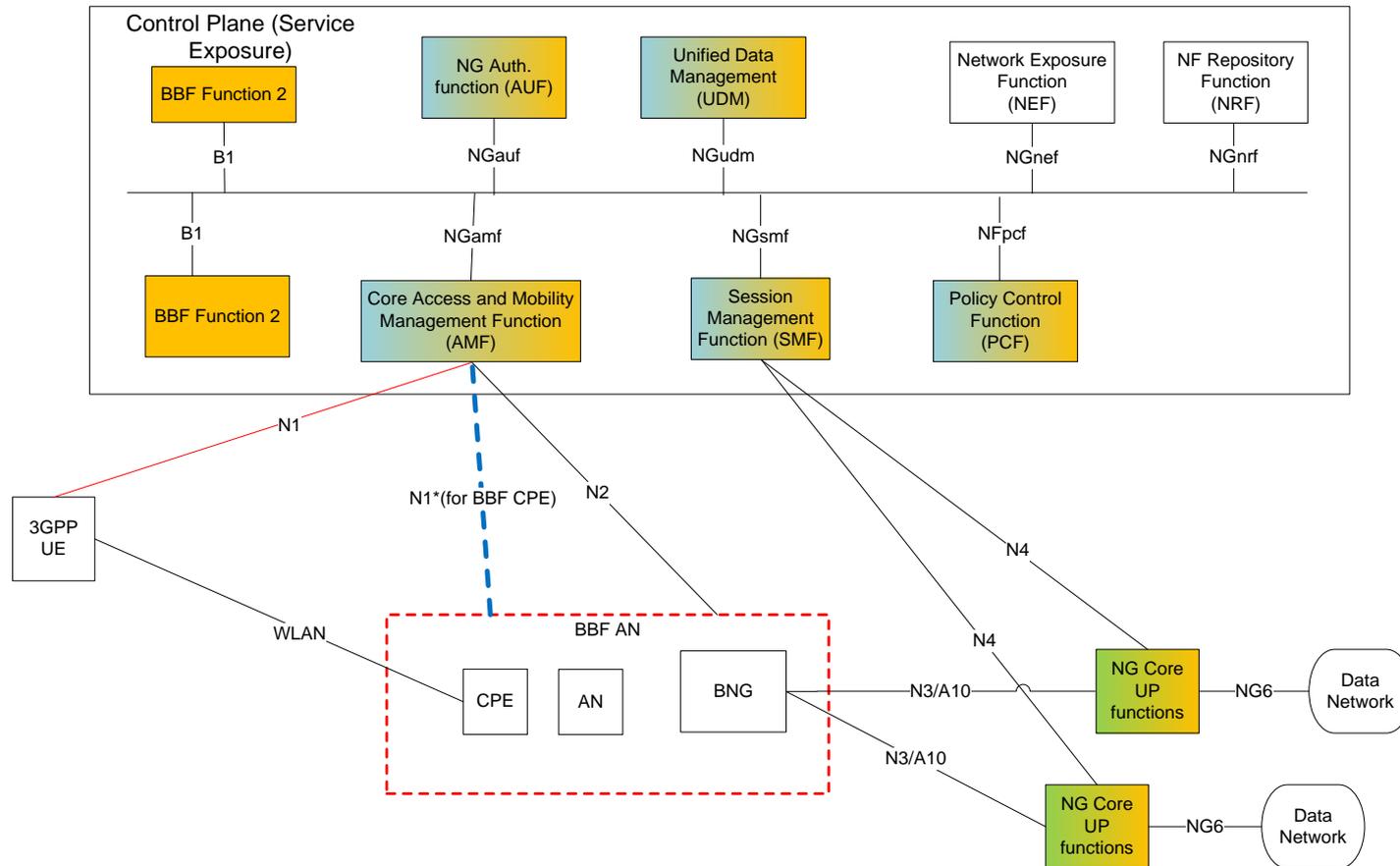
Hopefully not



# Key issue for supporting Wireline and Wireless by 5G Core Network (I)



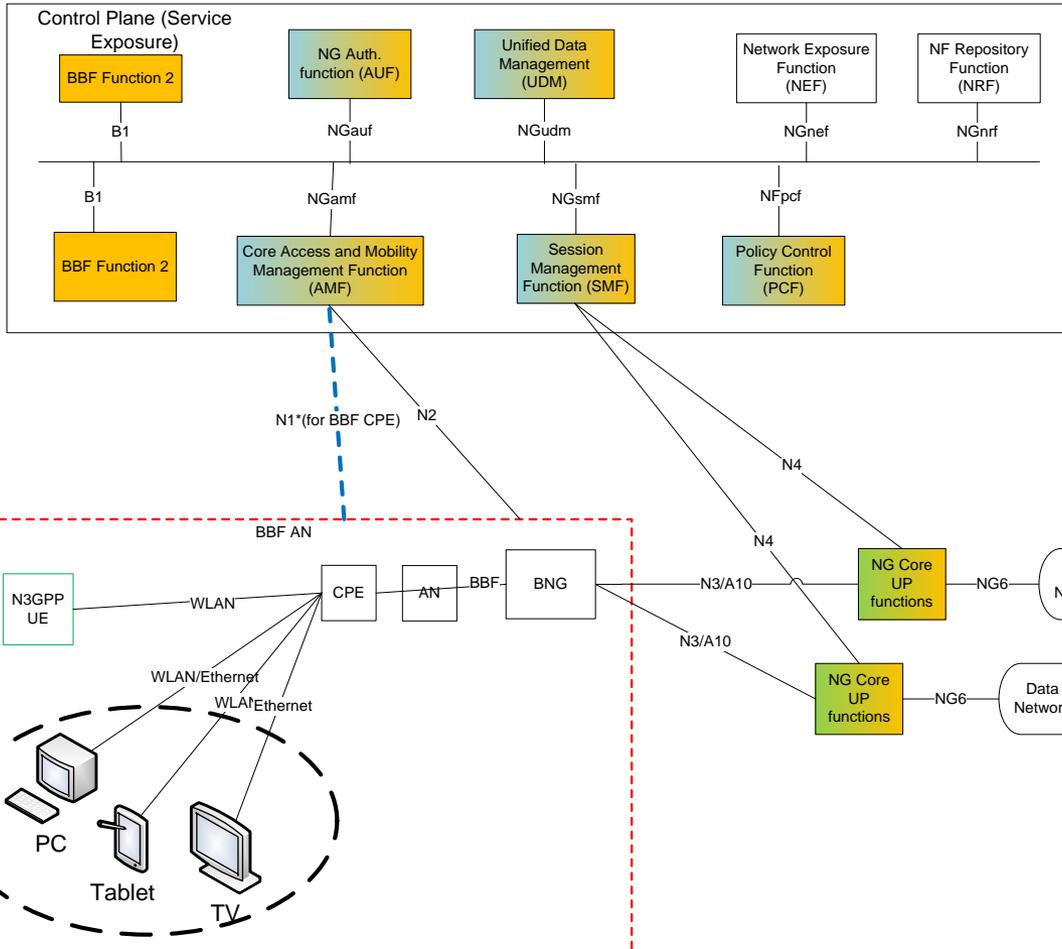
## 3GPP UE connected via BBF AN



# Key issue for supporting Wireline and Wireless by 5G Core Network (II)



## BBF devices connected via BBF AN



The architectures shown are intended as examples of potential support of BBF access by 3GPP Core Network and not currently proposed as solution.

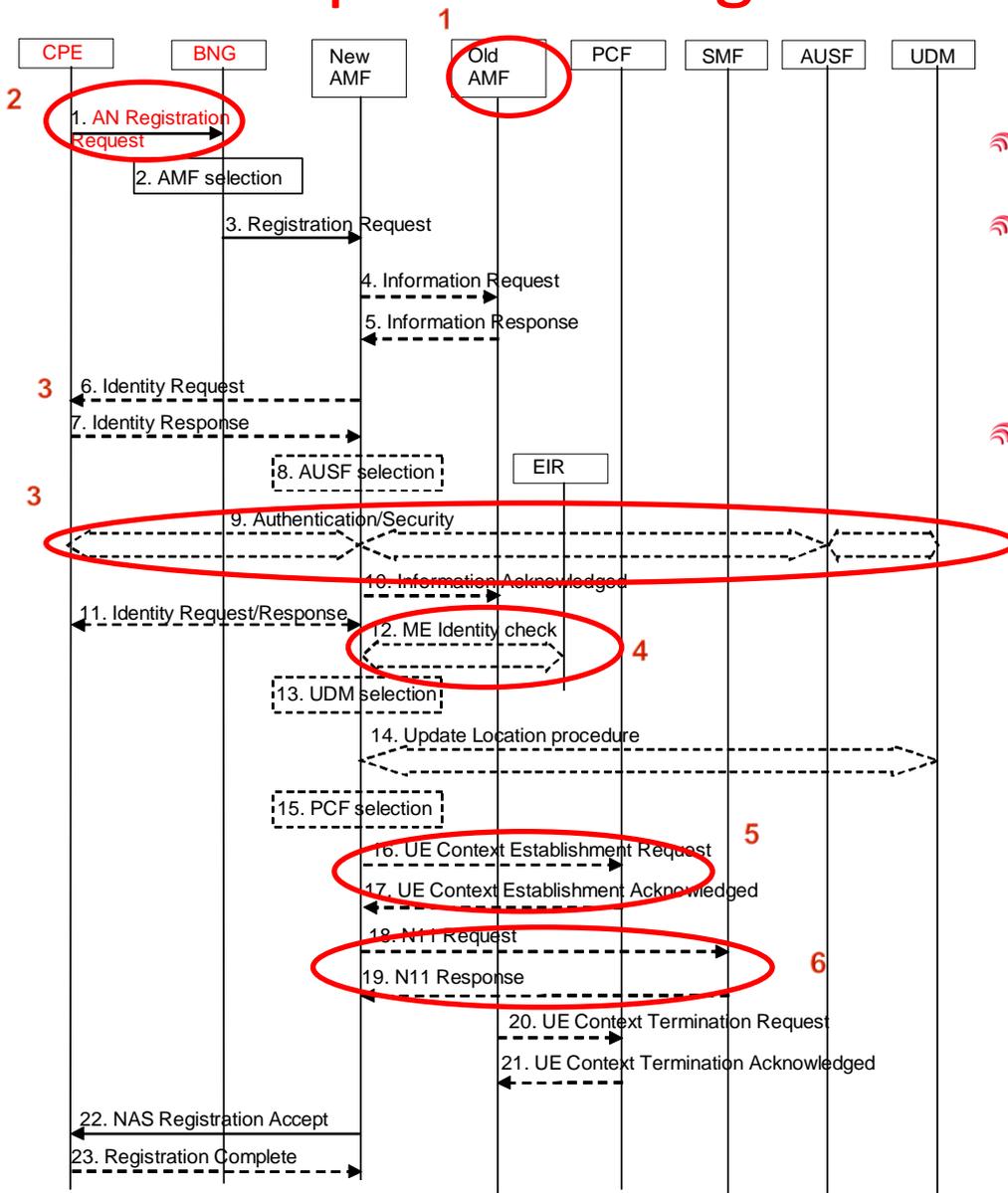
The scope is to highlight questions to be answered

- 📶 Are there BBF functions to be added to Core Network?
- 📶 Are there BBF functions which could be supported or replaced by existing 5G NFs or by enhancement of existing 5G NFs?
- 📶 Are there 5G NFs or functionalities which are not required for supporting BBF access and services (e.g. current assumption that mobility does not need to be supported)?
- 📶 Which are the resulting procedures?

# Example with Registration procedure



A GLOBAL INITIATIVE



☺ This example is not intended for proposing a solution, but for showing the consideration to be done

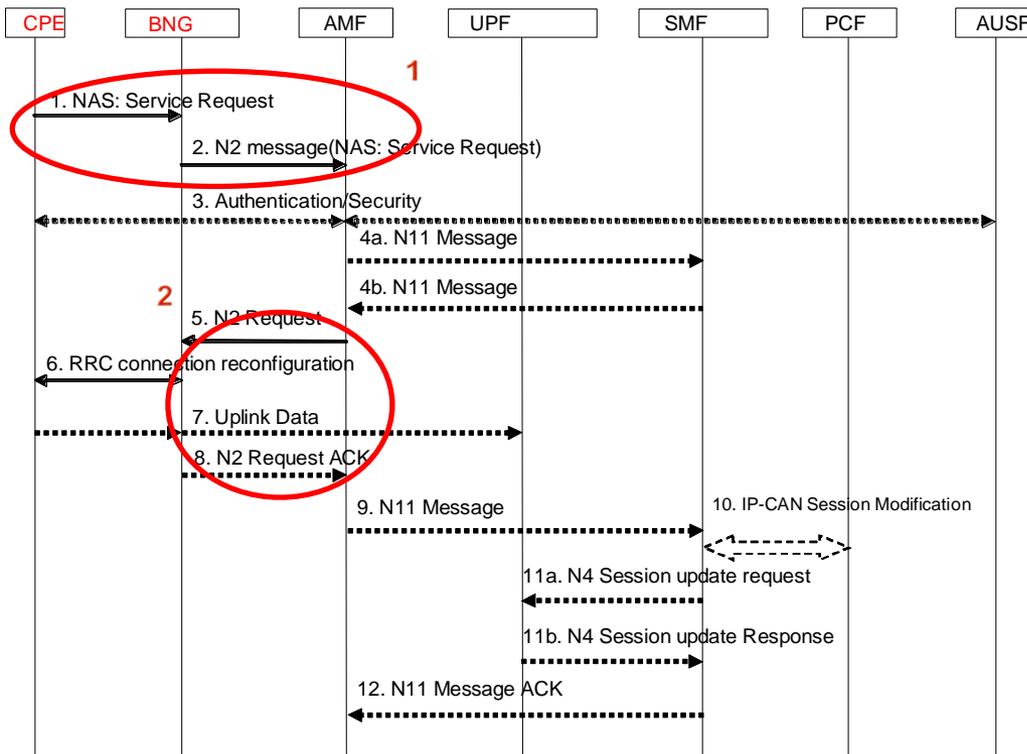
☺ The UE Registration procedure has been considered with the following assumptions

- UE → CPE
- (R)AN → BNG

☺ Considerations

- Is the whole procedure applicable to BBF accesses?
1. Interaction with OLD AMF not applicable for static scenario, while for nomadic is FFS
  2. What is this step for BBF Access ? 3GPP assumed that AN perform a slice selection based on NSSAI or temporary ID. Is current NSSAI definition applicable? Which temporary ID? Can/should be this a PPP session?
  3. The authentication is assumed going on NAS via AMF/AUSF/UDM. Should be replaced or enhanced?
  4. Is ME identity check not applicable, since RG is assumed that can not be stolen?
  5. The AMF retrieves policy. Are current policy applicable? Shall policy specific for wireline be added?
  6. Is applicable to BBF?
  7. At the end of Registration there are no PDU session, for BBF access it can automatically piggyback to PDU session establishment.

# Example with PDU session establishment procedure



- 📶 This example is not intended for proposing a solution, but for showing the consideration to be done
- 📶 The UE PDU session procedure has been considered with the following assumptions
  - UE → CPE
  - (R)AN → BNG
- 📶 Considerations
  1. Does CPE support NAS and Service request procedure? Is DNN applicable?
  2. Network send context information and other information which are RAN specific. Which are information wireline specific required?

# Session Management Key Issue



The list below includes studies that may be performed by BBF and/or 3GPP or/both

Work Task ID	Work Task(s)	Work Task Description
SM_WT_# 1	SM model	Is the PDU session concept enough generic to be applicable to BBF session? <ul style="list-style-type: none"> <li>- PDU session type: IP, Ethernet (different VLANs session?)</li> <li>- Identifier: for DN and PDU session (whether to use APN or not)</li> <li>- Support of PPPoE session ?</li> </ul>
		NAS based model applies to BBF AN? <ul style="list-style-type: none"> <li>- N1 terminated in CPE?</li> <li>- Basic procedures: Registration, on-demand SM setup, roaming/non-roaming support; Session maintenance (release, deactivation...) and related UE state change</li> <li>- Where is terminated N2?</li> <li>- Is BNG part of AN or the BNG play the role of UPF ? How CP/UP split of BNG is considered?</li> </ul>
		UPF selection: <ul style="list-style-type: none"> <li>- Selection per Access?</li> <li>- Which are UF selection criteria applicable to Fixed access, e.g. per location, per service, per device, etc?</li> </ul>
		Support of multi-home is applicable to BBF?
		Is Network-Initiated Session establishment applicable?
SM_WT_# 2	IP / Ethernet	<ul style="list-style-type: none"> <li>- IP addressing management</li> <li>- Ethernet / VLAN management</li> </ul>
SM_WT_# 3	N3 UP Model	<p>UP model for N3</p> <ul style="list-style-type: none"> <li>- N3 transport IP and/or Ethernet</li> <li>- Per AN tunnel?</li> <li>- Different tunnel model supported at same time on N3 for different device, e.g. when 3GPP connected to Access with PDU session (per PDU session) and for BBF device and services (per AN) ? or IP based transport and Ethernet based transport ?</li> <li>- Identify UP functionalities needed to provide IP and Ethernet PDU session (e.g. IP anchor, tunnelling, etc.)</li> <li>- Whether to simplify/remove tunnel if no mobility/session continuity is supported</li> </ul>
SM_WT_# 4	User plane flow relocation	<p>Coordinate the relocation of user-plane flows with the relocation of applications (hosted close to the point of attachment of the UE) due to the mobility of users</p> <p>Relocation is applicable for fixed device? Can be device nomadic, e.g. change BBF line where is connected for Community Wi-Fi?</p>
SM_WT_# 4	Hybrid Access	<p>CPE connected via 3GPP and BBF access</p> <p>Identify the architecture options for the following cases;</p> <ul style="list-style-type: none"> <li>- Multiple sessions via different accesses</li> <li>- A single session via different accesses</li> </ul>