Meeting Minutes (03 Aug. 2022)

* Everything needs to be finalized by Nov. meeting SA98
* Agenda agreed
	+ Toon: how power is generated needs to be discussed. Some UEs do not do anything when they have no power and triggered when they have power. Some UEs operate with very low level of power 24 hours.
		- Will discuss if time allows
	+ HW France: do you plan to have another offline call before next meeting?
		- May have another call before the meeting, e.g., 15-19
	+ E///: When is the deadline for the document? Meeting should before the deadline
* Definition of ambient IoT
	+ E///: Maximum instantaneous power from use case or from technology? Whether or not this value is needed?
		- Base on use cases. Value can be defined in other working groups, e.g., RAN. Option A and B should be discussed
	+ Qualcomm: Should have discussion on the power characteristics first (page 5). NB-IoT can serve a boundary.
	+ Toon: long life span 🡪 can have long life span.
	+ DT: not to mention USIM now. Important to differentiate from NB-IoT. Two types of devices need to considered, one without any power source and another type with power storage. Is it up to implementation?
		- What is the value for power storage? 1mAH?
		- Type of devices can be up to implementation
	+ Lenovo: Two type of devices need to be defined clearly.
		- Passive without battery, semi-passive for limited power storage capability
	+ ZTE: Definition should be general and some basic characteristics should be included.
	+ HW France: no change of battery for ambient IoT. Instead of power storage, focus on instantaneous power. A clear differentiation with NB-IoT is critical, e.g., coverage, etc. Two types of ambient IoT devices can be defined to address main use case and define KPI, etc.
	+ Qualcomm: passive or semi-passive device are design aspects. Ambient IoT metrics should be different from NB-IoT.
	+ KPN: do not define device types depending on whether there is a power capacitor, instead should be depending on the base of how power is provided and used, which should be discussed.
		- Make sense. Power pattern/profile has impact on the communication behaviour
		- For some use cases, capacitor is very useful.
	+ E///: Concerned with the table in page 5. Need to start from use cases. Not sure if we need to go down to specific technology, e.g., maximum power. Should keep discussion high level.
		- Power profile can be easily obtained and can go for option B.
	+ Qualcomm: We should look into the characteristics of the power for communication, which is a function of harvested power or battery, and see how it drives service requirements.
	+ DT: Option A better.
	+ Qualcomm: if option A, power only for communication and power characteristics should be identified.
		- Harvested power is different from consumed power
	+ DT: in option A, a range can be given
	+ KPN: not sure about option A, upper limit of the power can be discussed
	+ Apple: there are three scenarios: intermittent power, power storage, power by triggering signal. All three use cases should be elaborated.
		- Triggering signal can be scenario 1
	+ Qualcomm: three types use cases can depend on time dimension
	+ HW France: important to start from what use cases need and then go for three types.
		- For each use case, some power profile can be defined
	+ Apple: statement of “without battery or capacitor” should be kept in additional characteristics
	+ DT: power on demand type is not needed. Prefer two types
	+ Qualcomm: power characteristics can be defined for each use case.
	+ E///: agree with HW that baseline use cases should be defined first.
	+ OPPO: summary includes 1) battery 2) lower capability than NB-IoT 3) check power profile. What other aspects need to be discussed?
	+ HW: security aspect for next telco?
		- Yes
	+ Sureshsr: requirements for how the power is provided by gNB, e.g., radio wave energy harvesting? What is the scope of energy harvesting?
		- How energy is harvested is not in the scope. How power is provided can be further discussed for use cases.
* KPIs:
	+ OPPO: Devices per BS can be removed?
		- KPN: maybe useful for indoor case but can be removed
	+ DT: Not sure about use experienced data but no proposal
		- OPPO: also consider sensor data
		- DT: number of messages per time unit
		- OPPO: value is not average over all time but only the time during scheduled time slot/frame.
		- KPN: communication date rate is different from user experienced data rate
	+ Verizon: how is service dimension different from communication rage? Is position accuracy required? If pos accuracy can be measured, it means positioning service availability is always there?
		- Further study is needed.
		- Pos accuracy is only valid for a percentage of area. Network based or UE based pos can be further discussed.
		- HW France: positioning or ranging?
		- OPPO: not ranging. Horizontal can be removed.
		- E///: not sure about UE or NW based. If consider sidelink, we need to go back visit use case again.
		- Qualcomm: pos or ranging needs lots of KPIs. A separate table of KPI is needed. Not every use case requires it.
	+ Inventory rate
		- DT: definition is not clear
		- HW France: more KPIs are defined in literature, inventory rate discussion should be avoided.
		- KPN: do not understand how to define it
	+ OPPO: First three bullets should be further considered by all companies.
* Action points
	+ OPPO: updated slides to be shared within the loop.
	+ OPPO: another telco needs to be organized.

Note: If the company name is not explicitly specified, it is assumed to be OPPO.