**Previous agreements**

**Issue 1: UL PC**

**Agreement**: (RAN1#104-e)

On the setting of UL PC parameters except for PL-RS (P0, alpha, closed loop index) for Rel.17 unified TCI framework:

* The setting of (P0, alpha, closed loop index) is at least associated with UL channel or UL RS
* Select or modify from one of the following alternatives by RAN1#104bis-e for PUCCH, PUSCH, and SRS separately:
	+ Alt1. The setting of (P0, alpha, closed loop index) is also associated with UL or (if applicable) joint TCI state
	+ Alt2. The setting of (P0, alpha, closed loop index) is included with UL or (if applicable) joint TCI state
	+ Alt3. The setting of (P0, alpha, closed loop index) is neither associated with nor included in UL or (if applicable) joint TCI state
	+ Alt4. The setting of (P0, alpha, closed loop index) is determined as in Rel-16 without enhancement

**Agreement**: (RAN1#104bis-e)

On the setting of UL PC parameters except for PL-RS (P0, alpha, closed loop index) for Rel.17 unified TCI framework, for each of PUSCH, PUCCH, and SRS, in RAN1#105-e, further discuss to down-select or combine from the following alternatives:

1. AltA. The setting of (P0, alpha, closed loop index) is also associated with UL or (if applicable) joint TCI state
2. AltB. The setting of (P0, alpha, closed loop index) is also included with UL or (if applicable) joint TCI state
3. AltC. The setting of (P0, alpha, closed loop index) is neither associated with nor included in UL or (if applicable) joint TCI state

Note: It has been agreed that the setting of (P0, alpha, closed loop index) is associated with UL channel or UL RS (therefore the setting is channel- and signal-specific).

**Issue 1: PL-RS**

**Agreement**: (RAN1#104bis-e)

On Rel.17 unified TCI framework, in RAN1#105-e, further discuss to down select or combine from the following three alternatives for PL-RS (note: the text below is based on the agreed description in RAN1#104-e):

* AltA. PL-RS can be included in UL TCI state (or, if applicable, joint TCI state).
	+ FFS: Whether it is always included or not. If not included, PL-RS is the periodic DL-RS used as a source RS for determining spatial TX filter or the PL RS used for the UL RS in UL or (if applicable) joint TCI state.
* AltB. PL-RS can be associated with (but not included in) UL TCI state (or, if applicable, joint TCI state)
	+ FFS: Exact association mechanism
	+ FFS: Whether it is always associated or not. If not associated, PL-RS is the periodic DL-RS used as a source RS for determining spatial TX filter or the PL RS used for the UL RS in UL or (if applicable) joint TCI state
* AltC. UE calculates path-loss based on periodic DL RS configured as the source RS for determining spatial TX filter in UL or (if applicable) joint TCI state
	+ FFS: If a PL RS is not included in or associated with the UL TCI state (or, if applicable, joint TCI state), whether the UE can estimate path-loss based on the PL-RS of an UL RS provided in an UL TCI state (or, if applicable, joint TCI state) as a source RS for determining the spatial TX filter.

In addition:

* FFS (to be decided in RAN1#105-e) whether a fallback scheme is needed and, if so, the details
* FFS: Support additional UE capability to report whether above PLRS determination mechanism is supported
* Note: As agreed in RAN1#104-e, the total number of maintained PL-RSs per CC is no more than 4
* FFS: investigate the condition(s) agreed in Rel-17 and, if needed, study whether a UE can simultaneously maintain more than four path-loss estimates based on UE capability
* FFS: UE capability for maximum number of active PL-RS across CCs per band

**Agreement**: (RAN1#104-e)

On Rel.17 unified TCI framework:

* Select at least one of the following alternatives by RAN1#104bis-e for path-loss measurement (PL-RS):
	+ Alt1. PL-RS can be included in UL TCI state or (if applicable) joint TCI state.
		- FFS: Whether it is always included or not. If not included, PL-RS is the periodic DL-RS used as a source RS for determining spatial TX filter or the PL RS used for the UL RS in UL or (if applicable) joint TCI state.
	+ Alt2. PL-RS can be associated with (but not included in) UL TCI state or (if applicable) joint TCI state
		- FFS: Exact association mechanism
		- FFS: Whether it is always associated or not. If not associated, PL-RS is the periodic DL-RS used as a source RS for determining spatial TX filter or the PL RS used for the UL RS in UL or (if applicable) joint TCI state
	+ Alt3. The periodic DL-RS used as a source RS for determining spatial TX filter can be used as PL-RS. In case the periodic DL-RS used as a source RS for determining spatial TX filter is not used as PL-RS, reuse Rel.16 procedure with the same signaling structure (MAC CE+SRI field in UL-related DCI) to indicate PL-RS for UL transmission with minimum enhancement (e.g. pertaining to the use for PUCCH, or using default PL-RS)
		- PL-RS is not additionally configured in or associated to UL TCI state or (if applicable) joint TCI state
	+ Alt4. UE calculates path-loss based on periodic DL RS configured as the source RS or a periodic QCL-Type-D/spatialRelationInfo source of the source RS in UL TCI state or (if applicable) joint TCI state
		- FFS: Whether UE can calculate path-loss based on DL periodic RS for path-loss calculation for UL RS in the UL TCI
* FFS: Application time of PL-RS
* NOTE: As in Rel-16, a UE does not expect to simultaneously maintain more than four path-loss estimates per serving cell for all PUSCH/PUCCH/SRS transmissions
	+ FFS: investigate the condition(s) agreed in Rel-17 and, if needed, study whether a UE can simultaneously maintain more than four path-loss estimates