

ARTES 4.0 PLANNED 5G/6G ACTIVITIES SUMMARY TABLE

Activity Ref.	Title	Cost	Classification	Cost (K€) (Baseline)	Cost (K€) (Request)	Proc. Policy	Intended ITT issue quarter / intended ITT issue week	Closing date ITT	ITT (re-)issued	Status comment	originally approved in Work Plan
SPACE SYSTEMS FOR 5G/6G ACTIVITIES											
5G.01 - STANDARDISATION / LICENSING / REGULATORY SUPPORT											
5G.02 - 5G SYSTEM INFRASTRUCTURE STUDY											
3F.001	System study of large in-orbit-assembled arrays in Frequency Range 1 (FR1) for 5G and Beyond 5G	600	B	600	0	C		22/11/23	Y		2022
5A.084	Study and demonstrator of HEO payload architecture for 5G-connected mobile services (re-issue)	750	B	750	0	C			Y	ITT to be re-issued	2023
5G.03 - 5G NEW RADIO NTN FUNCTIONS/PROTOCOLS DEVELOPMENTS											
3A.181	5G New Radio (NR) Non-Terrestrial Networks control plane demonstrator for NGSO constellations	400	B	400	0	C		25/01/24	Y		2023
3B.044	Wideband channel model for NGSO land mobile services in Ka-band	500	B	500	0	C			Y	proposed for cancellation	2020
3C.035	3GPP New Radio (NR) precoding, multi-antenna and beam management techniques for MSS systems (re-issue)	500	B	500	0	C			Y	proposed for cancellation	2022
5G.04 - 5G CORE NETWORK DEVELOPMENTS											
3A.165	Beyond 5G/6G networking architectures for multi-layered Non-Terrestrial Networks and smart satellites	750	B	750	0	C			Y	negotiation	2022
7A.072	Integrated access-backhaul nodes for autonomous and reconfigurable satellite-terrestrial 5G/6G networks (re-issue)	1,000	B	1000	0	C		29/01/24	Y		2022
5G.05 - 5G TESTBED INFRASTRUCTURE											
3A.182	Vehicle-to-everything (V2X) services demonstration over satellite	1,500	B	1500	0	C	Q4 2023				2023
3A.183	NGSO simulator for 5G vehicle-to-everything (V2X)	500	B	500	0	C	Q4 2023				2023
3C.033	5G New Radio (NR) physical layer demonstrator for railway control communications over satellite	600	B	600	0	C			Y	awarded	2022
3D.005	Security solutions and security test bed for Non-Terrestrial Networks (re-issue)	750	B	750	0	C		15/12/23	Y		2020
5A.083	5G regenerative processor and associated system test-bed	4,000	B	4000	0	C	Q4 2023				2023
5G.06 - 5G UNIVERSAL SATELLITE-TERRESTRIAL USER EQUIPMENT (UE)											
6B.119	Artificial intelligence/machine learning front-end module for satcom 5G/6G integrated access-backhaul transceivers	500	B	500	0	C	Q4 2023				2023
7B.055	Reference model for universal satellite-terrestrial 5G user equipment	750	B	750	0	C			Y	proposed for cancellation	2020
7B.056	Reference IP core for universal satellite-terrestrial 5G user equipment (re-issue)	2,000	B	2000	0	C			Y	negotiation	2020
7C.061	Ka-band antenna for universal satellite-terrestrial 5G land mobile terminals	750	R	0	750	C	n/a			proposed for cancellation	2020
7C.062	Automotive S-band antenna for satellite IoT and 5G terrestrial communications	500	R	0	500	C	n/a			proposed for cancellation	2020
7C.082	Highly efficient 20 W S-band amplifier for 5G-connected cars	650	B	650	0	C		15/01/24	Y		2023
7C.084	5G automotive antenna prototype and demonstration	5,000	B	5000	0	C	Q4 2023				2023
5G.07 - 5G HUB OVER-THE-AIR DEMONSTRATIONS											
7C.086	End-to-end demonstration of 5G New Radio (NR) for future railway mobile communication systems	2,500	B	2500	0	C	Q4 2023				2023
5G.08 - 5G SATELLITE PROOF-OF-CONCEPT MISSIONS											
2-.020	Demonstration of an experimental 5G g-NodeB in space	4,500	B	4500	0	C			Y	negotiation	2020
3C.034	Digital Twin for Beyond 5G (B5G) and 6G satcom radio links (re-issue)	1,000	B	1000	0	C			Y	proposed for cancellation	2022
3E.011	6G satellite precursor	8,000	B	8000	0	C		05/12/23	Y		2023
3E.019	Open reprogrammable space infrastructure testbed for beyond 5G (B5G) end-to-end solutions and services	3,000	B	3000	0	C	Q4 2023				2023
5G.09 - BEYOND 5G (B5G) AND 6G											
3A.184	Beyond 5G (B5G) and 6G non-terrestrial networks edge computing satellites	1,200	B	1200	0	C	Q4 2023				2023
3A.185	Spectrum sharing techniques for Beyond 5G (B5G) and 6G 3D networks	2,500	B	2500	0	C	Q4 2023				2023
TOTAL (k€)		44,700		43,450	1,250						

(*) R activity for which a request for initiation has been received

Please note: **Baseline (B)**: these activities will be automatically initiated.

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On Delegation Request (R): these activities will only be initiated on the explicit request of at least one delegation.

Procurement Policy definitions:

C : Activities in open competition without any further restrictions.

C1: Activities in open competition limited to non-Large System Integrators (LSIs) as prime. LSIs are allowed to participate as sub-contractors.

C2: Activities in open competition, where a significant participation of non-LSIs is requested.

C3: Activity restricted to SMEs & R&D organisations, preferably in cooperation.

C4: Activities in open competition, subject to the SME subcontracting clause.

https://www.esa.int/About_Us/Business_with_ESA/Small_and_Medium_Sized_Enterprises/Opportunities_for_SMEs/Procurement_policy_on_fair_access_for_SMEs_-_the_C1-C4_Clauses