

Section	#	#.#	Question	CommScope Answers
		1	What are the chief challenges to the adoption and deployment of open and interoperable, standards-based RAN, such as Open RAN? Are those challenges different for public vs. private networks?	The key challenge for open and interoperable, standards-based RAN is the need for system integrators/vendors to take ownership of End-to-End system integration, qualification and maintenance throughout the full lifecycle of the system. Achieving full "plug&play" with multi-vendor equipment is difficult in complex cellular networks. So there remains the need for partners or vendors with strong integration skills to step up and take that ownership.
		1 a	What are the challenges for brownfield deployments, in which existing networks are upgraded to incorporate open, interoperable, and standards-based equipment?	Brownfield deployments are frequently not using open standards based equipment. Funding would help on roadmap acceleration of adding open standard based interfaces to already deployed equipment such as Distributed Antenna Systems (DAS) in support O-RAN based upgrading.
		b	How might NTIA best ensure funding is used in a way that complements existing public and private sector initiatives?	O-RAN based equipment is readily available for in-building deployments in support of the Open RAN initiative. Approval and endorsement for deployments is needed by all mobile network operators (MNO) to open the public network Enterprise market. Funding should as well support the MNO initiatives to test and approve the open RAN vendor solutions. Preference should be given to U.S. vendors that have a complete offering for public and private networks with solutions including 5G cellular, CBRS, and WiFi as well as wireline switching and connectivity as well as private key solutions.
		3	What kind of workforce constraints impact the development and deployment of open and interoperable, standards-based RAN, such as Open RAN? How (if at all) can the Innovation Fund help alleviate some of these workforce challenges?	Senior engineering recruitment is a challenge in the US. Funding should support both US positions as well as foreign positions.
		4	What is the current climate for private investment in Open RAN, and how can the Innovation Fund help increase and accelerate the pace of investment by public and private entities?	Recession climate poses challenges in the investments needed for accelerated O-RAN based 5G infrastructure equipment and solution development. Funding can help the 5G acceleration .
		5	How do global supply chains impact the open, interoperable, and standards-based RAN market, particularly in terms of procuring equipment for trials or deployments?	The current electric and IC part shortages cause price increases. Funds should be allowed to compensate the cost delta incurred when component purchases are forced to be done on the spot market for accelerated deployments.
		7	Are the 5G and open and interoperable RAN standards environments sufficiently mature to produce stable, interoperable, cost-effective, and market-ready RAN products? If not:	Security integration with an End-to-End system responsibility is an area that is critical for interoperability solutions and should play the highest role in the funding of this program.
		7 a	What barriers are faced in the standards environment for open and interoperable RAN?	Funding of US based senior engineering jobs to expand a strong US based security integration is important.
		7 c	What criteria should be used to define equipment as compliant with open standards for multivendor network equipment interoperability?	Passed IOT testing is one first and important step in the integration of standard based RAN components.

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		9 a	Are interoperability testing and debugging events (e.g., “plugfests”) an effective mechanism to support this goal? Are there other models that work better?	IOT testing is the first step which needs to be followed by integration of all system element with an End-to-End system responsibility by a skilled partner/vendor.
		13	What are the foreseeable use cases for open and interoperable, standards-based networks, such as Open RAN, including for public and private 5G networks? What kinds of use cases, if any, should be prioritized?	First focus areas should be indoor/local area networks, for both public and private scenarios with established and mobile network operator approved 5G O-RAN solutions.
		17	“Promoting and deploying security features enhancing the integrity and availability of equipment in multi-vendor networks,” is a key aim of the Innovation Fund (47 U.S.C 906(a)(1)(C)(vi)). How can the projects and initiatives funded through the program best address this goal and alleviate some of the ongoing concerns relating to the security of open and interoperable, standards-based RAN?	Security integration of all O-RAN equipment and the core network is mandatory to keep the wireless telecom network safe and secure. Funding preference should be given to US based entities with US based engineers to maximize security allowing only U.S. based security certificate partners.
		17 b	What role should ` , such as industry standards, best practices, and frameworks, play in the program’s criteria?	Security requirements and security integration should play a major role in the funding programs to harden the wireless networks and secure US infrastructure in support for energy and food independence.
		19	What role can the Innovation Fund play in strengthening the security of open and interoperable, standards-based RAN?	IOT testing (“plugfest”) is only the first step in the integration of standard based RAN components for a high quality and secure RAN. Security integration should play the highest role in the funding of this program. We see that role represented by funding of US based senior engineering jobs to expand a strong US based security integration. Strong partners/vendors with a proven track record of security integration should be given a preference.
		24	How can NTIA maximize matching contributions by entities seeking grants from the Innovation Fund without adversely discouraging participation? Matching requirements can include monetary contributions and/or third-party in-kind contributions (as defined in 2 CFR 200.1).	Matching contributions requirements should be flexible in size and time. Initial matching contributions for U.S. based publicly traded entities should be allowed to start at zero to maximize participation with a schedule that is tied to the achieved revenue.
		25	How can the fund ensure that programs promote U.S. competitiveness in the 5G market?	US headquartered small and medium size publicly traded companies that are already investing in O-RAN technologies and have O-RAN based product foundation which is approved already by major U.S. network operators should be given a preference in the funding allocation to scale and accelerate the U.S. 5G competitiveness.
		25 a	Should NTIA require that grantee projects take place in the U.S.?	Funding should be limited to companies that have U.S. based engineering teams already established. Augmentation by offshore engineering teams should not be a reason to deny a grant.
		25 b	How should NTIA address potential grantees based in the U.S. with significant overseas operations and potential grantees not based in the U.S. (i.e., parent companies headquartered overseas) with significant U.S.-based operations?	U.S. based and headquartered companies should be given a preference. Green House Gas reporting requirements should apply (US SEC requirements currently in work) to grantees.

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	25	c	<p>What requirements, if any, should NTIA take to ensure “American-made” network components are used? What criteria (if any) should be used to consider whether a component is “American-made”?</p>	<p>American-made (manufacturing) should consider the highest value-add steps to be performed in the USA including NAFTA countries. These high value-add manufacturing steps should include SW loading, SW key deployment as well as calibration and final testing. The value of SW, Firmware, FPGA code, and cloud components should count towards the American-made percentage required.</p>