



SYSTEM INTEGRATION AND SITE OPTIMIZATION

This Project Group Charter establishes the scope, intellectual property and copyright terms used to develop the materials identified in this Project Group. Only Participants that execute this Working Group Charter will be bound by its terms and be permitted to participate in this Project Group and shall be considered “Contributors” in the Project Group as defined in the **Telecom Infra Project IPR Policy document**.

TIP Board of Directors Approval Date: 10/19/2016

1. PROJECT GROUP NAME

System Integration and Site Optimization

2. PURPOSE

Operators are forced to prioritize their expenditure on technology upgrades and coverage improvements in the high-population-density cities. As a result, there are still billions of people around the world (mostly in rural regions) who do not have internet access. Moreover, operators are facing challenges in sustaining margins with declining ARPU in urban regions.

This Project Group will address system integration via innovative, cost-effective and efficient end-to-end solutions in order to serve both rural and urban regions in optimal and profitable ways.

3. PROJECT GROUP SCOPE

The scope of this Project Group will include cost analysis, cost-effective site engineering (site selection and setup), connectivity systems (wireless backhaul, satellite link, and efficient antenna technologies), automated maintenance and optimization, system integration, and business/revenue model (network infrastructure sharing, revenue-sharing model).

4. PROJECT GROUP DELIVERABLES

- i. Phase 1 [05/16]: Define Project Group scope

- ii. Phase 2 [07/16]: Cost analysis
 - a. Calculate the cost of bringing 4 billion people online under a variety of different assumptions and find a way to remove all of the non-value providing costs and focus on how this can deliver more connectivity and further the quality of the online access
- iii. Phase 3 [Q4/16]: Define program structure and subprojects of the System Integration and Site Optimization Project Group activities. Goal is to set up projects implementing deployable solutions and spin off (shared) subprojects including but not limited to:
 - a. Site engineering
 - i. Site selection software/methodologies: Finding new sites that maximize the coverage
 - ii. Simple site setup: Light-weight and small form factor design to simplify the site construction requirements as well as low-power consumption technologies to run on off-grid power such as solar and wind
 - iii. Site verification, troubleshooting and optimization
 - b. Automated maintenance and optimization: Advanced sensing and EMS capabilities
 - c. Connectivity systems: Wireless backhaul, satellite link, and efficient antenna technologies
 - d. System Integration: Validity on interface-based integration between subsystems in the telecom infrastructure (work with Unbundled Solutions Project Group)
 - e. Business/Revenue model: Network infrastructure sharing and revenue-sharing model

5. PATENT LICENSING

The patent license for all Contributions, Draft Specifications and Final Specifications within this Project Group shall be:

[Check one box]

- RAND License Option**, as set forth in Section 5.2.1 of the Telecom Infra Project IPR Policy.
- Royalty-free License Option**, as set forth in Section 5.2.2 of the Telecom Infra Project IPR Policy.

6. FINAL DELIVERABLE COPYRIGHT LICENSING

Project Group agrees to grant the following copyright license for the Final Specification:

[Check one box]

x **Creative Commons Copyright Attribution 4**, Each Project Group Contributor agrees that its Contributions are subject to the Creative Commons Attribution 4.0 International license - <http://creativecommons.org/licenses/by/4.0/legalcode>.

□ **Full Release of Copyright into the public domain**, Each Project Group Contributor agrees to release its Contributions to the public domain and waive all copyrights associated with them.

7. INITIAL PROJECT CHAMPIONS

AMN, Nexius, Vanu

8. CHAIR AND(OR) CO-CHAIR OF PROJECT GROUP

Chair

Gi Wan Choi, SK Telecom, giwan.choi@sk.com

9. PARTICIPATION CRITERIA

- i. Fit of the proposed contributions to the Project Group scope
- ii. Commitment to contribute a non-proprietary open solution