



RF Planning Systems Engineer

Ashburton, United Kingdom

Department Description:

Cambium Networks develops Point to Multipoint and Point to Point RF solutions in both unlicensed and licensed bands. Customers include tier 2 and 3 telephony operators, wireless internet service providers, enterprises such as utilities, and federal, state and local governments. Technologies include 802.11, 802.16e and Canopy (proprietary).

The primary objective of the Network Management team is to provide tools to allow customers to plan and manage their networks.

Scope of Responsibilities/Expectations

- The successful candidate will lead a small team developing Cambium's highly-regarded LINKPlanner propagation and network planning tool. We're looking for an experienced System Engineer who is an experienced developer of digital wireless communication products or propagation planning tools, either as a systems or software engineer, working as a team leader of the development team.
- The development cycles between releases are short, usually only 4 to 8 weeks, therefore the role requires tight time management and an ability to keep control of the release cycle process, as well as flexibility to changing requirements.
- There are many different product teams and changes happen on the different product lines simultaneously, requiring prioritization of content for each release to ensure that a balance is maintained so that LINKPlanner releases are scheduled in relation to the product feature releases.
- The role will involve working closely with the different product development teams to understand the changes made in existing products in each release and identify which of those changes will impact the performance, commissioning or Bill of Materials and define the modifications required in LINKPlanner. In addition, for new products to the Cambium portfolio, this will involve identifying all the parameters required for the new product to be accurately represented within the tool and defining how the product should be incorporated into the tool.
- The candidate will also be involved in the development of new functionality within LINKPlanner to improve both capacity and interference planning as well as general enhancements to the tool.
- The candidate will be required to test the functionality that they have defined and verify that the performance of the tool is as expected without affecting existing functionality.
- The LINKPlanner team also provides customer support on the use of the tool and it would be an advantage for the candidate to be able to provide support on network design queries and fault finding of deployed links. Some experience of designing customer's networks using existing planning tools would be an advantage, however this is not the primary function of this role.
- The candidate will require a good knowledge of the fundamentals of wireless propagation

and the algorithms used to predict the availability of fixed PTP and PMP links, including the relative impact of tropospheric fading and rain fading.

- The role will also include management of the LINKPlanner budget and could be expanded to a full managerial role for the team in addition to the systems engineering work.

Specific Knowledge/Skills

- Strong RF propagation knowledge,
 - must be able to understand and manipulate link budgets
 - know what parameters in the product are likely to impact the link budget
 - Understand availability calculations and how different link configurations impact availability, relative impact of tropospheric fading and rain fading.
- Understanding of antennas and implications of use and alignment of single and dual polar antennas both directional and sector.
- An understanding of typical microwave equipment components required to configure a link
- Familiarity with different standard radio air interfaces such as OFDM, LTE, Wi-Fi is preferred
- Understanding of typical link configurations and base station configurations used in PTP and PMP wireless networks, and how these configurations affect availability.
- Understanding of elevation and land cover data, mapping projections and GIS systems
- Familiarity with commercially available radio planning tools
- Ability to design effective user interfaces; it's important that LINKPlanner remains accessible to non-expert users.
- Ability to analyse complex systems, reason wisely, and express him/herself concisely and accurately in speech and in writing. The systems team provide detailed requirement specifications that form the basis of software development. Some software developers will not be wireless experts, and the systems team must capture the required behaviour in language that software engineers understand.
- Keen attention to detail; the LINKPlanner contains information about many product variants and accessories, and it's important that we always select the correct products for a particular link or sector. Customers will order products based on the bill of materials generated within LINKPlanner and it will be a real problem for our customers if we make an error.
- Excellent time management
- Strong self-motivation and decision-making ability under tight timescales, whilst being adaptable to changing product timescales