LB01 - Basic Link Budget Theory Course

Aimed at those with a basic knowledge of satellite communications to intermediate level, this two day course will equip participants with knowledge to undertake basic uplink, downlink and overall link budgets for satellite communications, based on the use of the SatMaster+ and Pro suite of software from Arrowe Technical Services.

Pre-requisites: Students will be expected to have/bring the following:

- Basic knowledge of satellite communications
- Laptop computer with SatMaster Pro (latest version) installed

Number of students: 15 maximum
Duration: 2 days
Venue: Luton, Beds UK; or customer premises

Course Syllabus

- Satellite System Configuration
  - Link Budgets – overview
  - Uplink & Downlink components
  - Transponders – organization and usage
  - SCPC (Single Channel Per Carrier) and TDMA (Time Division Multiplex Access)

- Link Budget Principles
  - Targets and Objectives
  - Significance of Availability Percentage
  - Inter-relationship of FEC (Forward Error Correction) and BER (Bit Error Rate Ratio)
  - Modulation schemes – QPSK & 8-PSK
  - Beam Advantage
  - Uplink power and path losses
  - Antenna gain & uplink EIRP calculation
  - Satellite parameters – receive sensitivity, transponder settings, and downlink power
  - Interference
  - LNB (Low Noise Block downconverter) and noise figure
  - Calculation of G/T (figure of merit) of antenna system
  - Hardware losses – uplink and downlink
  - HPA requirements
  - Input and Output Back-Off
  - Sample link budgets

- Use of SatMaster software
  - Inputting of parameters
  - Variation of parameters
  - Results and understanding the limitations
  - Example exercises

Bookings: please email training@beaconseek.com to enquire further.