

FloridaNet Network Prioritization and Coverage Planning Meeting

FloridaNet Mobile Data Usage and Analysis Discussion

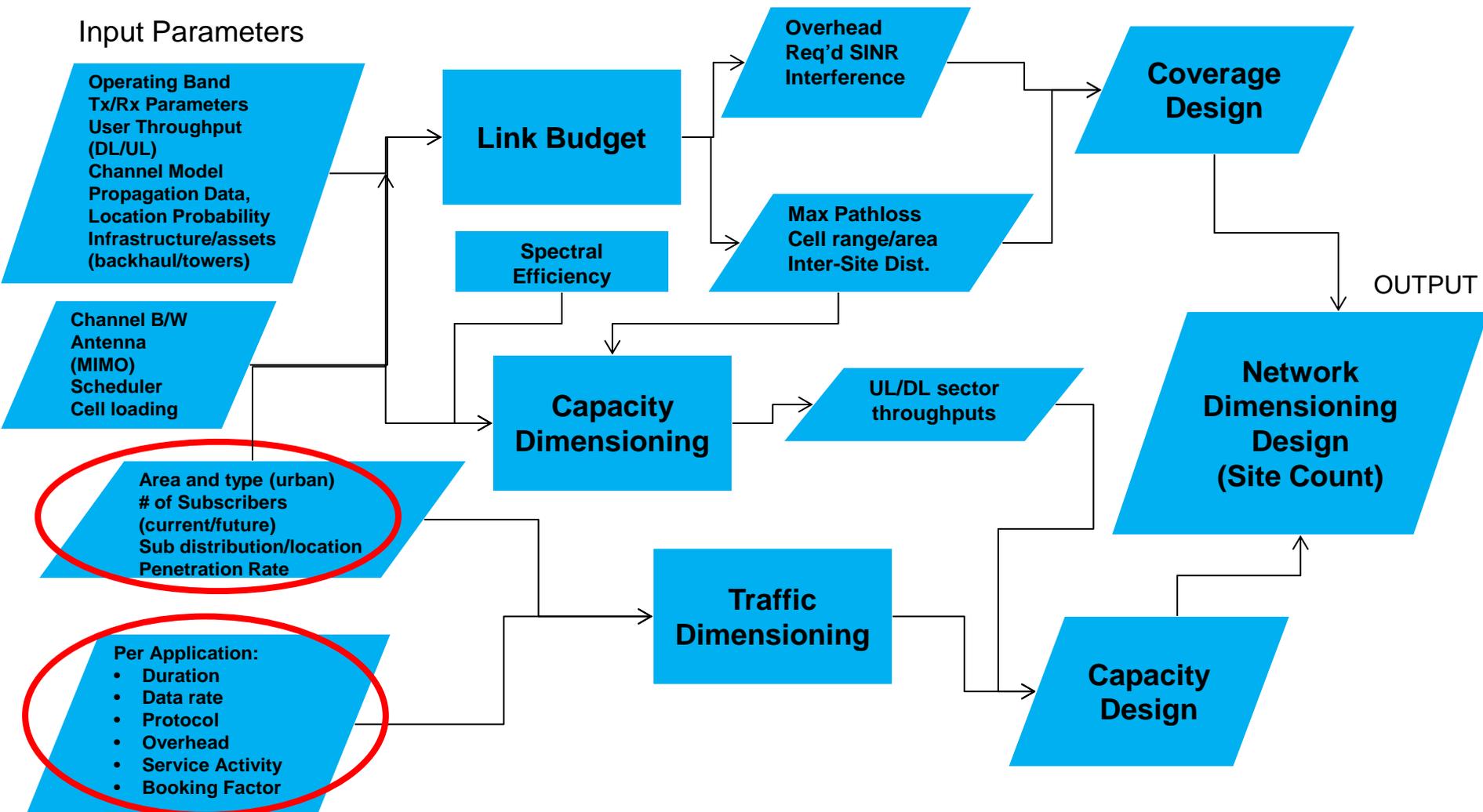
July 17th, 2014



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Typical High Level LTE Design Process

Input Parameters



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May not be exact design process followed by FirstNet

Traffic Model/Profile Input Data (High Level)

Areas circled in red on previous slide

- Number of subscribers/first responders
- Type and number of devices
- Location of subscribers/first responders
 - Distribution per deployment area (dense urban, urban, suburban, rural)
 - Indoor vs. outdoor
- Data usage/volume (MB) per application (both DL and UL)
 - Duration (s)
 - Data Rate (kbps)
 - Protocol Overhead
 - Service Activity
 - Overbooking factor

Ideally, would like get the above for both:

- Typical busy hour
- Public Safety Incidents (3 or more)
 - Type (e.g., RNC)
 - Scale (e.g., 3x, 5x, 10x overload)



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Per Application Input Parameters (Sample)

VoIP/VoLTE

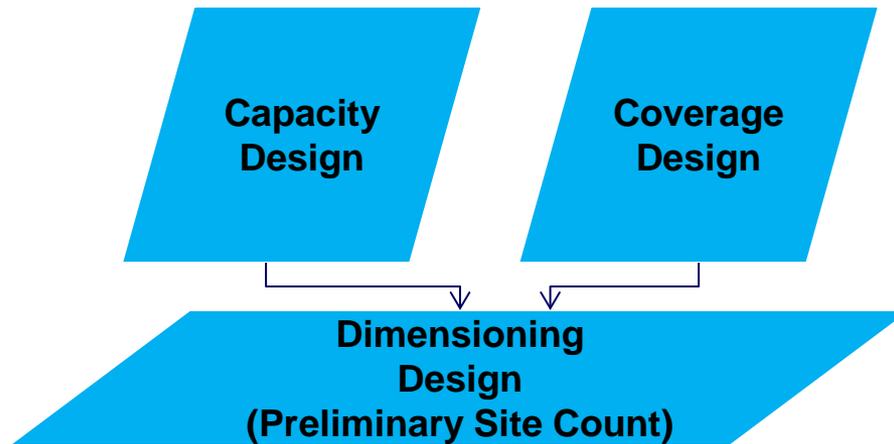
- Call Attempts
- Call Duration (s)
- Data Rate (kbps)
- Service Activity
- Streaming
 - Call Duration (s)
 - Data Rate (kbps)
- Web Browsing, E-Mail, VPN
 - Data Volume (MB)
 - Protocol Overhead

FirstNet may not look at per application, and simply go with flat rate (DL/UL) and overbooking factor!!



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What Happens Next in Typical LTE Design Process?



Site Surveys



Depending on the infrastructure/asset inventory already provided, this may only be required for new sites

Network Deployment Design

Initial Optimization

Final Design (Site Count)

Final Optimization

Network Launch

May not be exact design process followed by FirstNet



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Goals and Things to Think About:

- Information exchange
- Decision on what input parameters for traffic model/profile
- How to collect these input parameters?
 - Not every organization has S/W tools (e.g., NetMotion, RadioIP, MobileCEM, JDSU)
 - Surveys?
- Deliverable for FirstNet would be traffic profile/model
 - Will FirstNet even ask for this? There is interest but no formal format.
 - FirstNet primarily concerned with coverage at first! Flat rate method for capacity? (using FCC guidelines of 768 kbps DL/256 kbps UL?)
 - Capacity design will become more crucial pending spectrum sharing arrangements (with carriers, utilities, other non-responder tenants/roamers)
 - Exact format still not known, exact information FirstNet wishes to collect still not known but should have some feedback in next few weeks
 - Probably need to wait until SLIGP Phase 2 (data collection) and responses to FirstNet Comprehensive Network RFP to know for sure exact FirstNet direction
- Mobile data usage report will allow baseline/benchmark:
 - Determine if FirstNet is improving current mobile data usage
 - Determine baseline for future needs/trending
 - Determine which data plan (if not unlimited) to place first responders prior to FirstNet on-air and for commercial roaming (when FirstNet is on-air)



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Goals and Things to Think About:

- How to enhance, compliment traffic model/profile?
 - Merge Automatic Vehicle Location (AVL) tool data (includes location) with mobile data usage tools (e.g., NetMotion, RadioIP)
 - Request commercial carrier BH data for first responders
 - Call Detail Records (CDRs) data form commercial carriers
 - Identify data applications which can be loaded on SmartPhones to track data usage
- Traffic profile/model (current) for mobile data usage may not reflect future traffic model when FirstNet is deployed
 - New applications will be used (sensors, M2M, etc.)
 - Application use may shift
 - FirstNet will have priority mechanisms which may not be currently available on commercial networks during times of network congestion
 - Will also depend on roaming agreements with commercial carriers (if implemented in FirstNet)



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