



Spectrum management

Pacific Regional Seminar on Spectrum Management

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The need for spectrum management solution

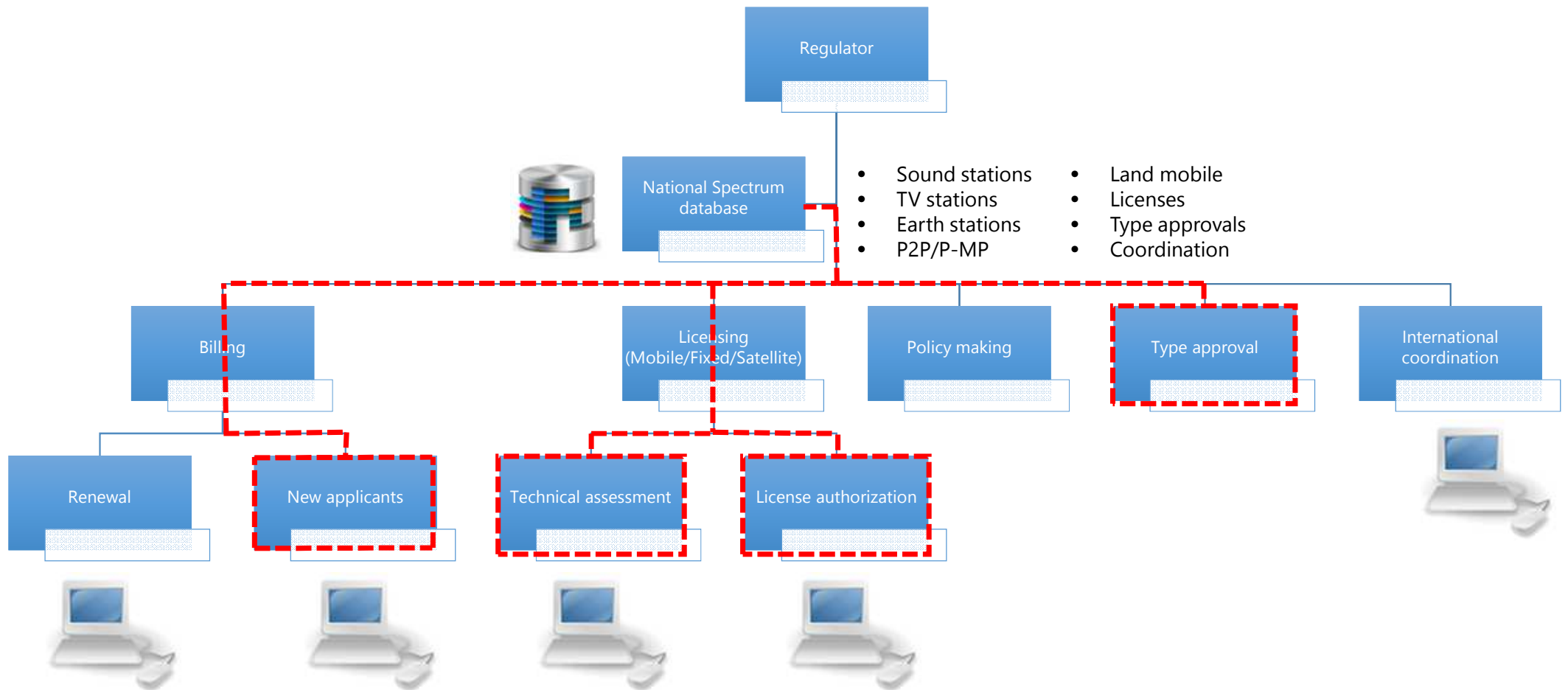


- Interference between unmanaged existing and new services
- Slow re-allocation of existing licenses
- Uncertainty and hence risk of adoption
- Slow adoption of new wireless technologies

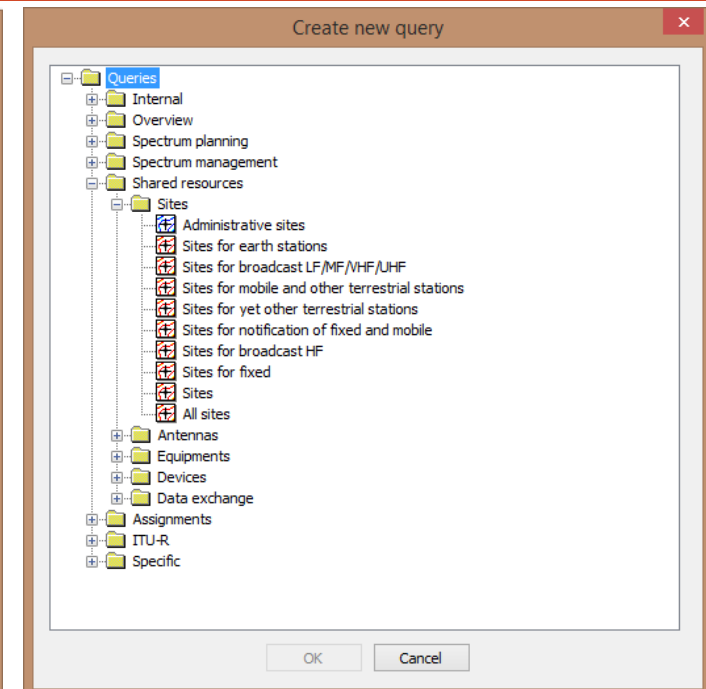
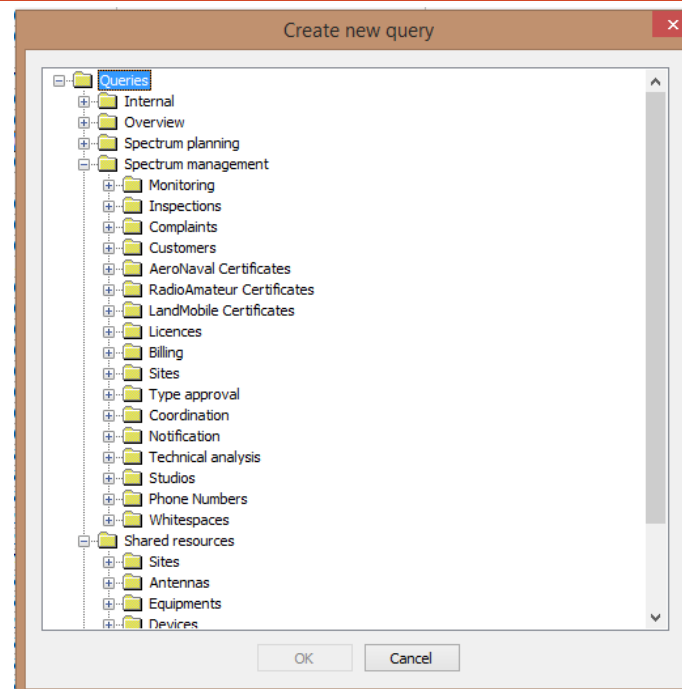
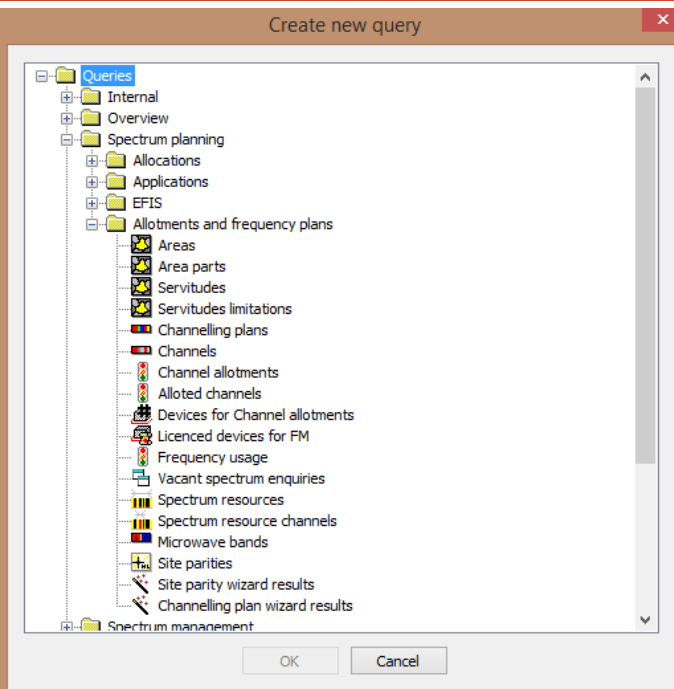


“The less you have control over the current landscape of the spectrum use the harder it is to introduce new services”

Spectrum management breakdown



Database solution



- +Spectrum resources
- bands & channels
- Allotments

- +Spectrum management
- Customer accounts & billing
- Sites and certifications
- Coordination and approvals

- + National site resources
- VHF/UHF
- LF/MF
- HF

Records management



The screenshot displays the ICS Manager software interface. At the top, the title bar reads "ICS Manager - E:\backup\Training\N... 2014\Workspace\Test - [Licenses]". The menu bar includes options like File, Follow-Up, Planning, Control, Licencing, Type Approval, Broadcast LF/MF, Broadcast HF, Broadcast VHF/UHF, Space services, Fixed, Other Terrestr., Whitespace, Tools, Configuration, Window, and Help.

The main interface is divided into several sections:

- Data Table:** A table with columns: ID, Status, Type, Type description, Radiocom syst..., Owner, Identifier, Start date, and Stop date. The visible rows include:

ID	Status	Type	Type description	Radiocom syst...	Owner	Identifier	Start date	Stop date
raft 16a		Aircraft Sta			AIRLINES OF PNG	PNG-2107-02-01	01 Mar 2005	01 Mar 2013
raft 16b		Aircraft Sta						
raft 16c		Aircraft Sta						
raft 16d		Aircraft Sta						
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raft 16o		Aircraft Sta						
raft 16p		Aircraft Sta						
raft 16q		Aircraft Sta						
raft 16r		Aircraft Sta						
raft 16s		Aircraft Sta						
raft 16t		Aircraft Sta						
raft 16u		Aircraft Sta						
raft 16v		Aircraft Sta						
raft 16w		Aircraft Sta						
raft 16x		Aircraft Sta						
raft 16y		Aircraft Sta						
raft 16z		Aircraft Sta						
raft 17a		Base Sta						
raft 17b		Base Sta						
raft 17c		Base Sta						
raft 17d		Base Sta						
raft 17e		Base Sta						
raft 17f		Base Sta						
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raft 17v		Base Sta						
raft 17w		Base Sta						
raft 17x		Base Sta						
raft 17y		Base Sta						
raft 17z		Base Sta						
raft 18a		Vehicle						
raft 18b		Vehicle						
raft 18c		Vehicle						
raft 18d		Vehicle						
raft 18e		Vehicle						
raft 18f		Vehicle						
raft 18g		Vehicle						
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raft 20y		atel 27a - Ar						
raft 20z		atel 27a - Ar						
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raft 21w		Hand-P						
raft 21x		Hand-P						
raft 21y		Hand-P						
raft 21z		Hand-P						
- Map:** A topographic map showing terrain contours and a red location marker. The marker is labeled with an orange arrow and points to a specific location near "Nobanob Mission" and "MOUNT HANSEMAN".
- Left Panel:** Contains site location details for "TV Station n°7 -- MT" in "MADANG PROVINCE". Fields include:
 - Effective antenna height(m): Max. [] C.
 - Site location: Name = [7], MADANG PROVINCE; Long/Lat = / 145° 00'E / 5° 30'S; Reference = WGS 1984 145.46 -5.503; City = / 82.
 - Displacement Station: South [] West [].
 - Frequency allocations: Check Frequency allocations...
- Right Panel (Radiation Configuration):** A dialog box with a red dashed border containing:
 - Radiation:** Height AGL (55 m), Azimuth (32.00°), Elevation (-1), Vert. Beamwidth (1.50°), Power to ant. (50 kW), Antenna gain (11 dB), Tx losses (4.3 dB), Polarization (V - Vertical), H-pol. ERP, V-pol. ERP (50 kW), Remark, Azimuth of the maximum effective.
 - Antenna library:** Code = 95, Name = / /, Type =, Import... button.
 - Pattern:** Empty text area.
 - Usable Field Strength:** 53.0 dBuV/m.
 - Coverage threshold:** 58.0 dBuV/m.
 - Display coverage:** No ICS Telecom data.

Engineering Analysis



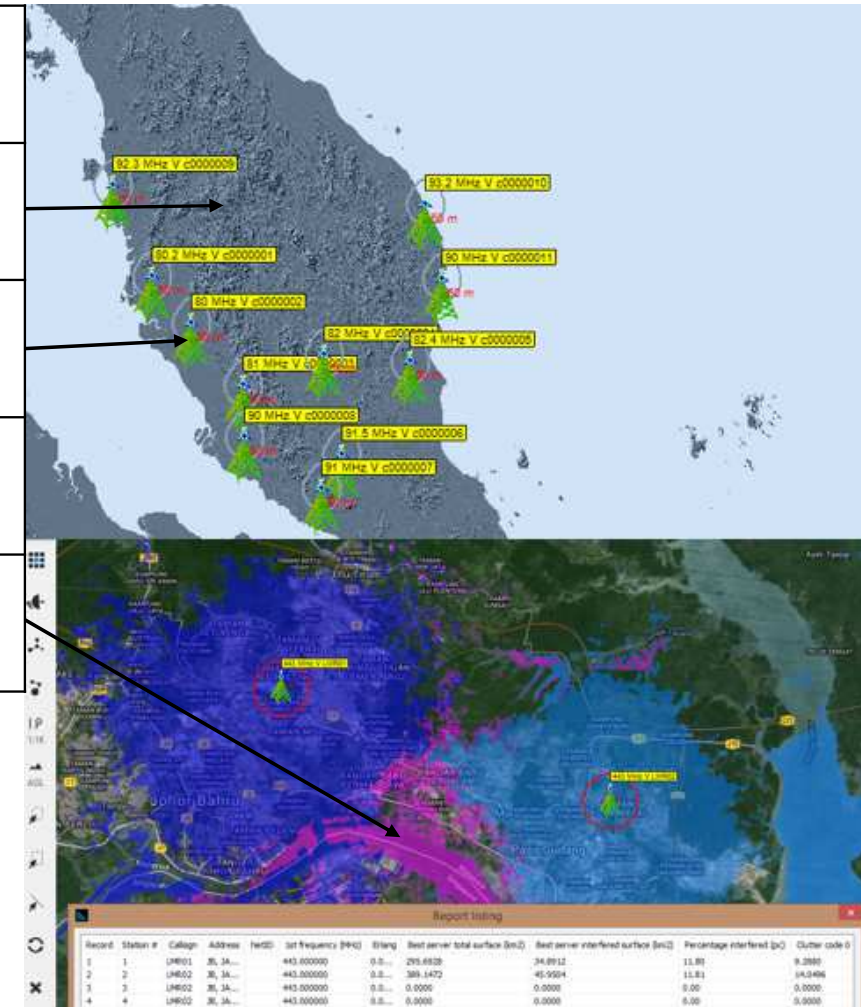
Topographic maps

Digital terrain model

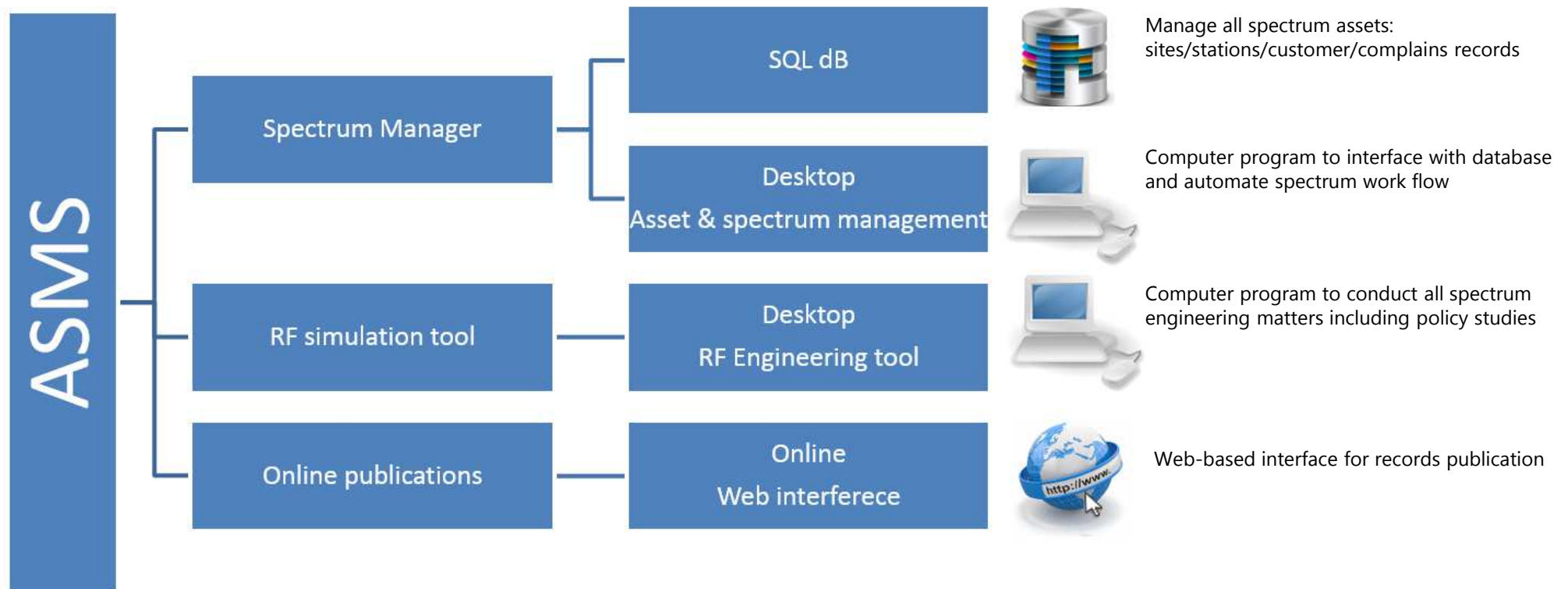
Base stations parameters

Service coverage

Interference analysis

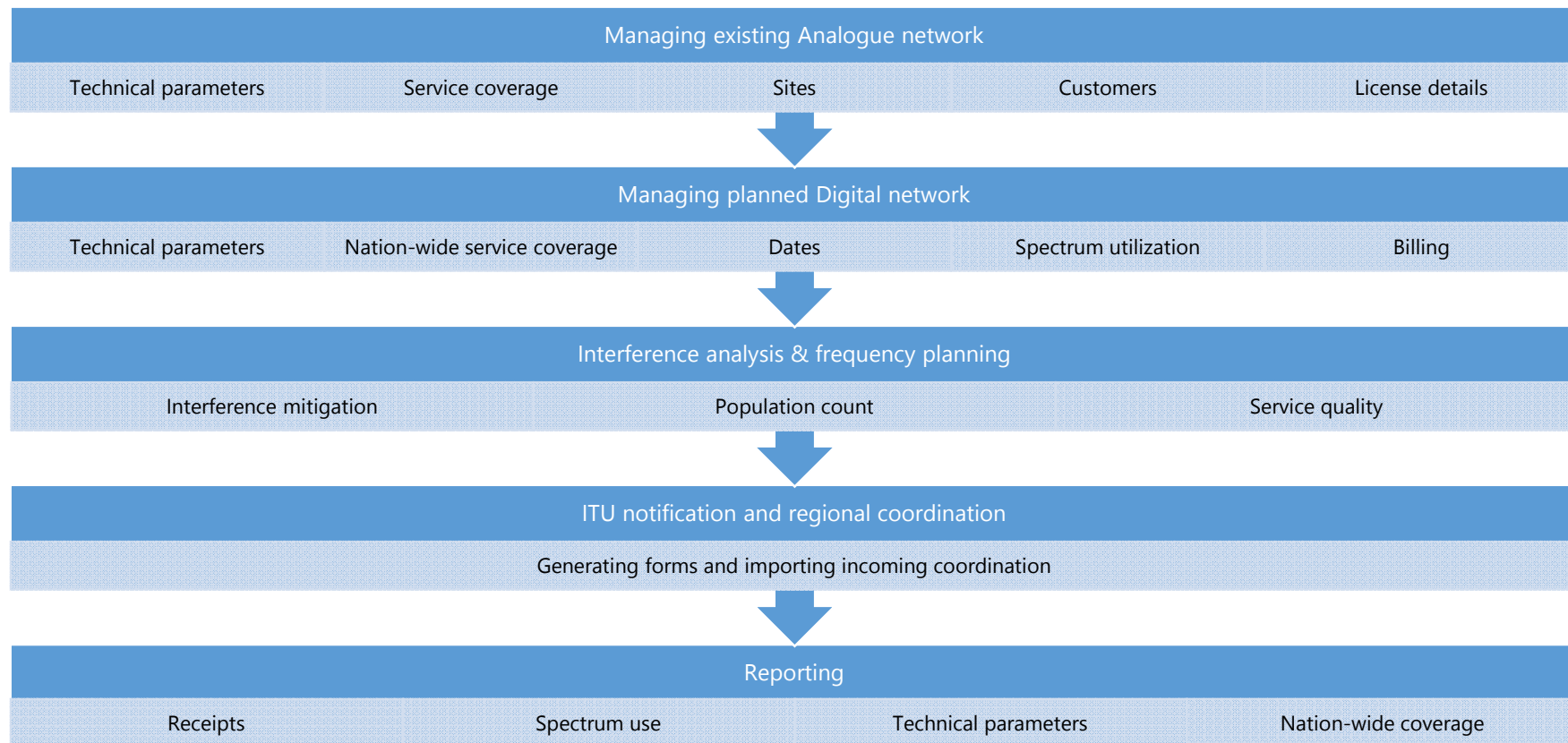


Automatic spectrum management system



Use-case Managing analogue to digital migration **ATDI**

How ASMS can be useful in ATV to DTV migration?



Thank you 😊

Questions and Clarifications:

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Spectrum management

Co-existence analysis (few KHz to 100 GHz)

Network planning

Spectrum Management & optimisation