



# Digital Radio in Thailand

Overview of DR FP work

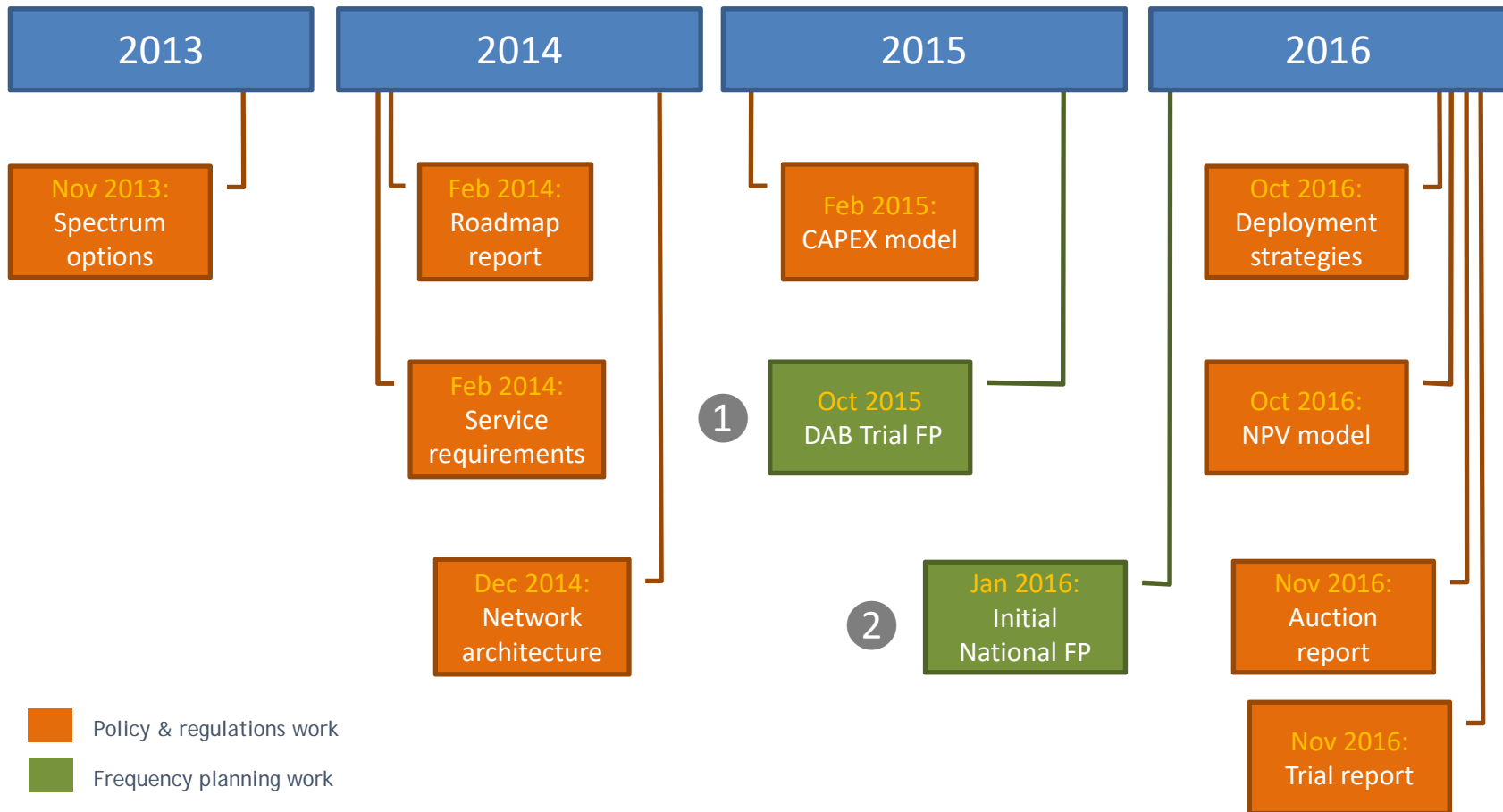
13 December 2017

Peter Walop

---

# ITU/NBTC joint DR projects

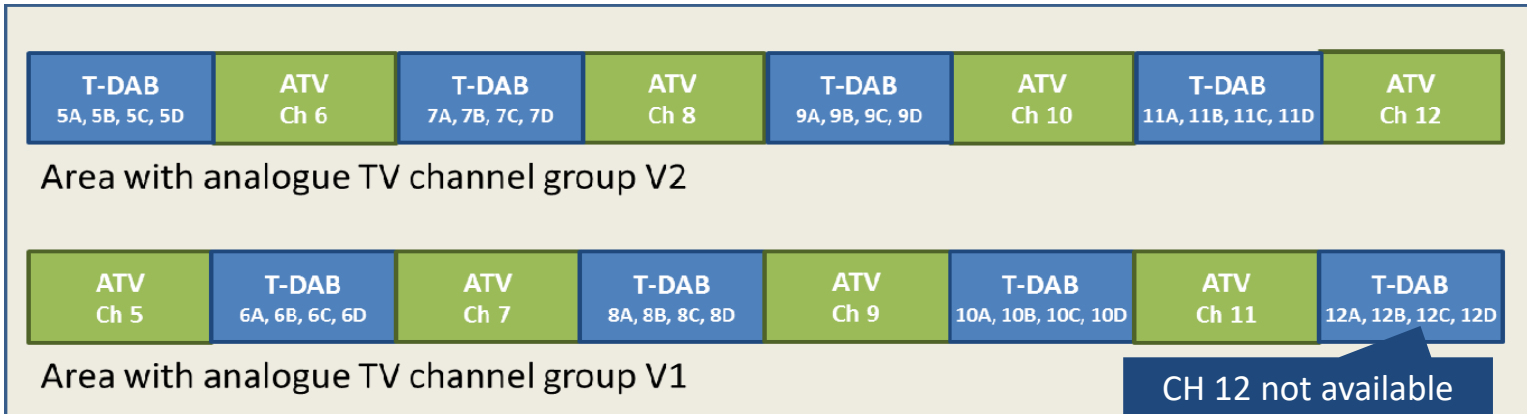
## Overview of key deliverables



# ITU/NBTC joint DR projects

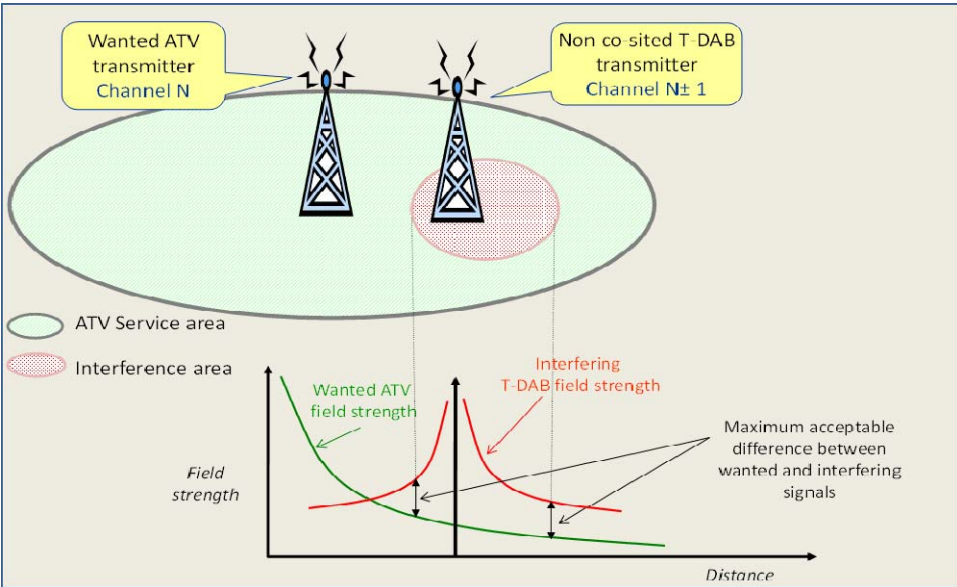
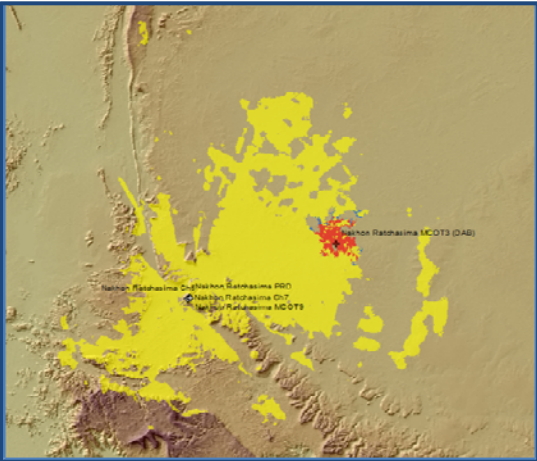
## 1 DAB Trial FP

DAB Trial to protect ATV



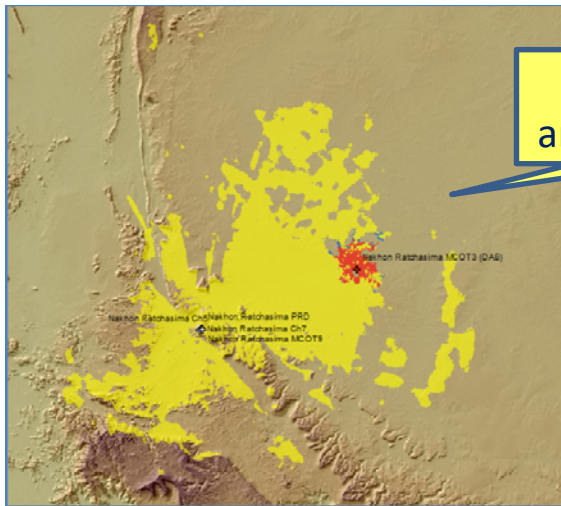
CH 12 not available for DAB in Thailand

Adjacent channel interference to be avoided

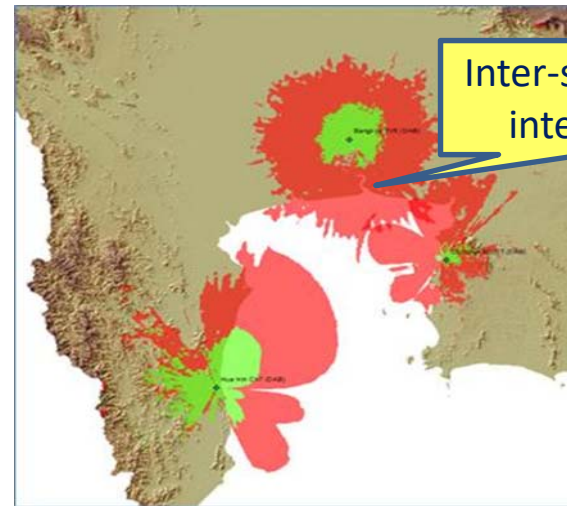


# ITU/NBTC joint DR projects

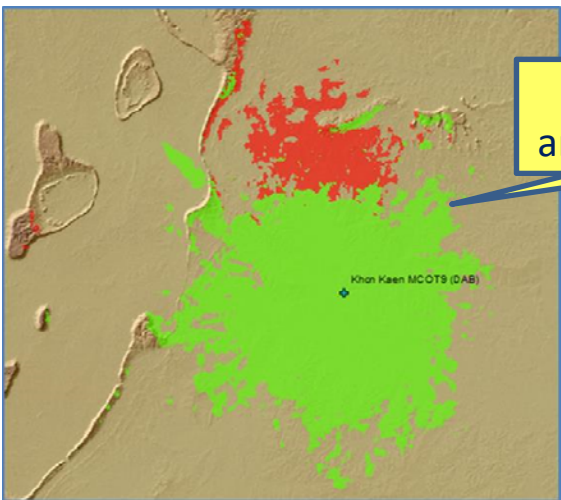
## 1 DAB Trial FP



Interference  
analysis DAB>ATV



Inter-service DAB  
interference



Interference  
analysis ATV>DAB

# ITU/NBTC joint DR projects

## 1 DAB Trial FP

### ITU - ATV protected

DAB site	DAB block	ERP	Network mode
Bangkok-CH5	6B	1.0 kW	MFN
	6C	5.0 kW	MFN
	10C	2.0 kW	SFN with Chonburi 10C
Chiang Mai-CH7	6C	10.0 kW	MFN
	8C	10.0 kW	MFN
	10C	10.0 kW	MFN
Chonburi-MCOT	10B	0.4 kW	MFN
	10C	2.0 kW	SFN with Bangkok 10C; delay 20 $\mu$ s
	10D	0.5 kW	MFN
Hua Hin-CH7	6D	10.0 kW	MFN
	8B	2.0 kW	MFN
	8C	10.0 kW	MFN
Khon Kaen-MCOT9	6B	2.0 kW	MFN
	6C	10.0 kW	MFN
	10C	10.0 kW	MFN
Nakhon Ratchasima-MCOT3	9C	0.5 kW	MFN
	11C	1.0 kW	MFN
	11D	0.25 kW	MFN
Nakhon Sri Thammarat-PRD	6C	0.2 kW	MFN
	8C	0.2 kW	MFN
	10C	0.2 kW	MFN
Song Khla-Ch 5	7C	-	
	9C	0.2 kW	MFN
	9D	0.1 kW	MFN

# ITU/NBTC joint DR projects

## 2 Initial National DAB FP

#	Number of sites	Example network topology	ERP	Mean ERP per site	Household coverage %
1	200	T-DAB Plan 1.1	1 kW to 50 kW	13.3 kW	90.2%
2	171	DTTB topology	All sites 10 kW, except Bangkok 20 kW	10.1 kW	93.2%
3	200	DTTB topology plus 29 additional non-existing sites	All sites 10 kW, except Bangkok 20 kW	10.1 kW	95.7%
4	200	70% of the DTTB sites and 31% of additional sites replaced by DAB, FM, ATV or telecom sites	All sites 10 kW, except Bangkok 20 kW	10.1 kW	95.6%
5	225	DTTB topology plus 54 additional non-existing sites	All sites 10 kW, except Bangkok 20 kW	10.0 kW	96.2%

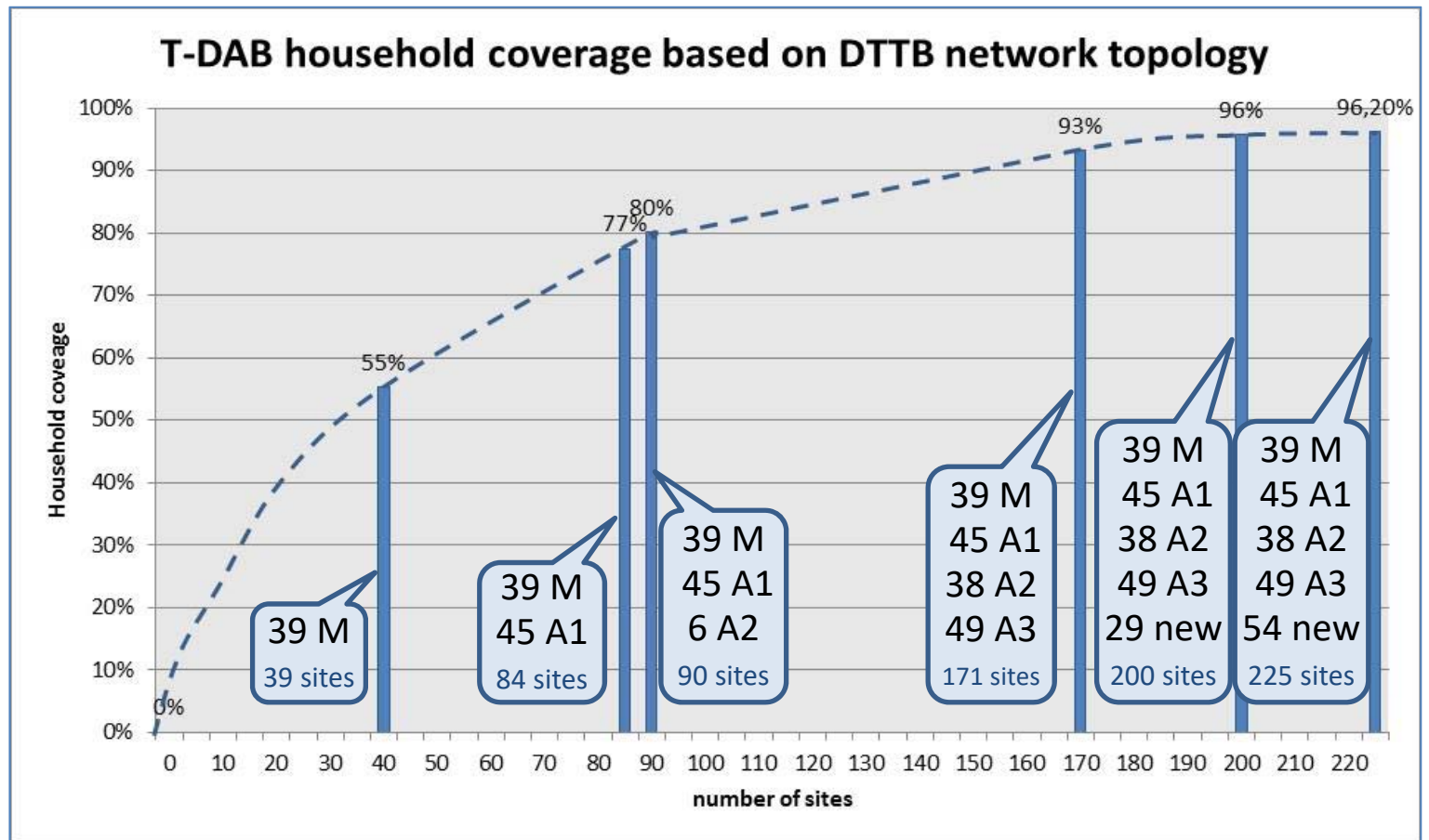
### Main Conclusions

- With 200 sites 95% PI HH coverage could be achieved
- In the detailed planning the coverage may deviate due lower ERP/HRP to resolve interference and a higher or lower number of sites may be needed

# ITU/NBTC joint DR projects

## 2 Initial National DAB FP

T-DAB HH coverage as function of the number of sites



- 80% PI HH coverage with about 90 sites
- Last 25 sites contribute about 0.2% of total HH