



Utah Communications Authority

Keeping Public Safety Connected

FLEET MAP TRAINING



- Quin Stephens Executive Director - Tina Mathieu Deputy Director - Michael Veenendaal Interoperability Division Director -

OVERVIEW

- Introduction
- Goals and Objectives
- Fleet Mapping Defined
- **Best Practices**
- **Fitting all the pieces**
- **Current vs New**
- **Nomenclature**



History of the System / System Evolution

- Utah's System One of Largest in North America.
- Grew by both collaboration as well as UCAN/UCA growth.
- Radio user fee model encouraged a “sales” approach to the system.
- All of this means there are many different theories, ideas, requests, policies, etc.





INTRODUCTION

Implementation of P25 System is opportunity to reconsider many aspects of Utah's radio system.

- There were things we did very well.
- And there are things we could improve upon.





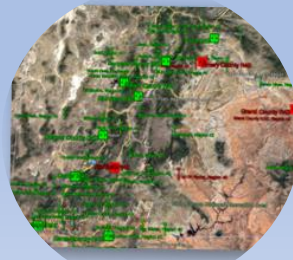
GOAL

Promote a uniform approach to the design and management of Local, State, or Regional Interoperable Trunked Radio Communications



OBJECTIVES

Allocate Subscriber ID's to prevent duplication between Systems Drive System Configuration and Channel Loading Define Subscriber Operational needs and unique characteristics Develop Talk Groups for Local, State, and Regional communications Promote Interoperable communications using common talk group parameters Establish common management systems and practices



Fleet Mapping Defined



- Fleet mapping is the process of configuring the features and programming parameters of a trunked radio system to function according to the unique operational requirements of each participating agency. Fleet mapping can be thought of as:

- Configuring trunked systems for management and control of subscriber radios.
- Assigning talkgroups to the radios issued to personnel.
- Assigning talkgroups to the dispatcher control positions.
- Defining the feature subsets available to the personnel using the radios and dispatcher control positions.





Fleet Mapping Best Practices

- Develop talkgroups for local, regional and statewide communications
- Regional communications plans based on operational needs
- Minimize user intervention (reduce knob turn)
- Promote interoperable communications for local to regional to statewide to serve common needs
- Efficient configuration for channel loading (minimize busies)
- Limit roaming to leave resources available for local or regional communications
- Radio management (who can talk to whom and where)
- Simplify communication paths to create an understandable and quickly accessible template for users.



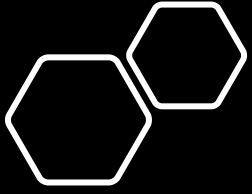
Local Wide Area Coverage

- Industry best practice to reduce the over all cost of operation is to segment primary traffic to sites that provide service to the user's geographic location.
- This allows for a site that provides an agency that serves a municipality with hundreds of thousands of residences to have maximum channel capacity locally. Limiting capacity at sites that are only used for secondary users to be accessing while passing through or providing mutual aid.
- An example would be the population centers of Provo, Ogden, Salt Lake have the largest cells of capacity ranging from 20 to 12 talk paths for the users to conduct daily communications where a rural site has only 5 talk paths. If a user from the population center were to tie up a rural site for the convenience of listening to there traffic this will not allow the rural user to conduct their mission.
- To address and allow the system to police the users a surrounding site approach would allow for all the local traffic to be accessed beyond the user's home area but limited to just the neighboring county. If a Utah county user lives in Juab they would be able to drag traffic but not outside a neighboring county to Utah county.



What Goes Into Fleet Mapping





Current Fleet Map

- The present fleet map is a descendent of the legacy conventional VHF repeater model. A single agency per repeater, where your radio has all your neighbor's single repeaters programmed in your radio.
- Each user within the community or region they service have access to all surrounding agencies talkgroups.
- This presents a self dispatch model, where the user can monitor communications traffic without the receiving dispatch center being aware.
- It has allowed for the Dragging of traffic Busying out PSAPS and Users across the system.
- Caused confusion on talkgroup usage
- Limited Interoperability

ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5
VERTN PD	UPD OQURH	OPS 1	EVENT 1	8CALL90
VERTN TAC	UPD WASTH	OPS 2	EVENT 2	8TAC91
VERTN C2C	UPD SPL S	OPS 3	EVENT 3	8TAC92
RVICE	UPD MIDVL	OPS 4	EVENT 4	8TAC93
RRIMAN PD	UPD TAC 1	OPS 5	EVENT 5	8TAC94
CC C2C	SLCPD PN	OPS 6	EVENT 6	ST RPT 1
APER PD	SLCPD LTY	OPS 7	EVENT 7	ST RPT 2
PD	UHP NO	OPS 8	EVENT 8	ST RPT 3
C LAW 1	UHP SO	OPS 9	EVENT 9	ST RPT 4
J P D 1	FIRE 1	OPS 10	EVENT 10	ST RPT 5
J P D 2	FIRE 4	NO RGN	EVENT 11	ST T/A 1
NDY PD	HERRIMN C2C	N E RGN	EVENT 12	ST T/A 2
VC PD D1	SSL PD	S W RGN	EVENT 13	ST T/A 3
VC PD D2	MURRAY PD	S C RGN	EVENT 14	ST T/A 4
OTTONWD	LZ-1	S E RGN	EVENT 15	ST T/A 5
RGN	LZ-2	SL RGN	EVENT 16	8CALL90



NEW FLEET MAPPING DESIGN

- The new fleet map is a model of better agency interoperability, providing each agency and user the ability to interoperate within out outside of your normal daily operations. It provides:
 - More interagency talkgroups
 - A unified interoperability approach across the system
 - The ability for the individual PSAP to manage communication between ALL responding units within the system.
 - Limited traffic dragging
 - Flexibility for Growth

Local Talkgroups		INTEROP TALKGROUS											
		County		Regional					Statewide		Conventional		Regional
Zone 1	Zone 2	Zone 3	Zone 4	Current Associated Talkgroup	Zone 5	Current Associated Talkgroup	Zone 6	Current Associated Talkgroup	Zone 7	Current Associated Talkgroup	Zone 8	Zone 9	Zone 10
SL LAW 1	SL LAW 16	SL OPS 1	TAC 1 BR	Event 1	TAC 16 MT	Event 4	TAC 31 SE	Event 9	OQ CALL	SL Regional	ST RPT 1	7TAC51	HOSP CALL
SL LAW 2	SL LAW 17	SL OPS 2	TAC 2 BR	Event 1	TAC 17 MT	Event5	TAC 32 SE	Event 9	WA CALL	North Regional	ST RPT 2	7TAC52	BR HOSP 1
SL LAW 3	SL LAW 18	SL OPS 3	TAC 3 BR	Event 1	TAC 18 MT	Event 5	TAC 33 SE	Event 9	BR CALL	North Regional	ST RPT 3	7TAC53	BR HOSP 2
SL LAW 4	SL LAW 19	SL OPS 4	TAC 4 BR	Event 1	TAC 19 MT	Event 6	TAC 34 SE	Event 9	MT CALL	South Central Regional	ST RPT 4	7TAC54	WA HOSP 1
SL LAW 5	SL LAW 20	SL OPS 5	TAC 5 BR	Event 1	TAC 20 MT	Event 6	TAC 35 SE	Event 9	CN CALL	South West Regional	ST RPT 5	7TAC55	WA HOSP 2
SL LAW 6		SL OPS 6	TAC 6 WA	Event 2	TAC 21 CN	Event 11	TAC 36 SW	Event 8	SE CALL	South East Regional	ST T/A 1	7TAC56	OQ HOSP 1
SL LAW 7		SL OPS 7	TAC 7 WA	Event 2	TAC 22 CN	Event 11	TAC 37 SW	Event 8	SW CALL	South West Regional	ST T/A 2	7FIRE63	OQ HOSP 2
SL LAW 8		SL OPS 8	TAC 8 WA	Event 2	TAC 23 CN	Event 11	TAC 38 SW	Event 8	NE CALL	North East Regional	ST T/A 3	7FIRE83	MT HOSP 1
SL LAW 9		TAC 6 OQ	TAC 9 WA	Event 2	TAC 24 CN	Event 11	TAC 39 SW	Event 8			ST T/A 4	7MED65	MT HOSP 2
SL LAW 10		TAC 7 OQ	TAC 10 WA	Event 2	TAC 25 CN	Event 11	TAC 40 SW	Event 8			ST T/A 5	7MED86	CN HOSP 1
SL LAW 11		TAC 8 OQ	TAC 11 OQ	Event 3	TAC 26 NE	Event 12					7CALL50	8TAC91	CN HOSP 2
SL LAW 12		TAC 9 OQ	TAC 12 OQ	Event 10	TAC 27 NE	Event 12					8CALL90	8TAC92	SW HOSP 1
SL LAW 13		TAC 10 OQ	TAC 13 OQ	Event 15	TAC 28 NE	Event 12						8TAC93	SW HOSP 2
SL LAW 14			TAC 14 OQ	Event 16	TAC 29 NE	Event 12			LZ 1	LZ 1		8TAC94	NE HOSP 1
SL LAW 15			TAC 15 OQ	Event 7	TAC 30 NE	Event 12			LZ 2	LZ 2			NE HOSP 2
OQ CALL	OQ CALL	OQ CALL	OQ CALL	SL Regional	OQ CALL	SI Regional	OQ CALL	SL Regional	OQ CALL	SL Regional	OQ CALL	OQ CALL	OQ CALL



Talkgroup Nomenclature



User Talkgroups

“Police, Fire,
EMS User
Communication
Paths”



Draper – SL Law #
Provo – Utah Law #
Layton – DA Law #

Talkgroup Nomenclature



Car 2 Car

State c2c

County c2c

City c2c



AUX

WA AUX 1

BV AUX 1

SU AUX 1

Talkgroup Nomenclature

“Collaborative County
interoperable Communication ”



AUX

These are agency specific talkgroups designated for agencies to communicate of their main talking group. These were referred to as Car 2 Car in the previous system.

The new Fleet Map provides AUX Talkgroups for agencies requiring car 2 car talkgroups.



Talkgroup Nomenclature

Call TALK GROUPS are designated for a regional interoperability Communications.

“Communicate Home”



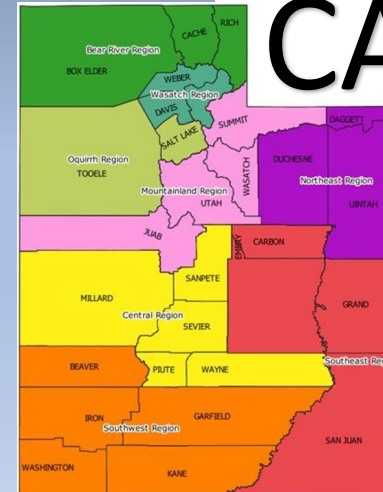
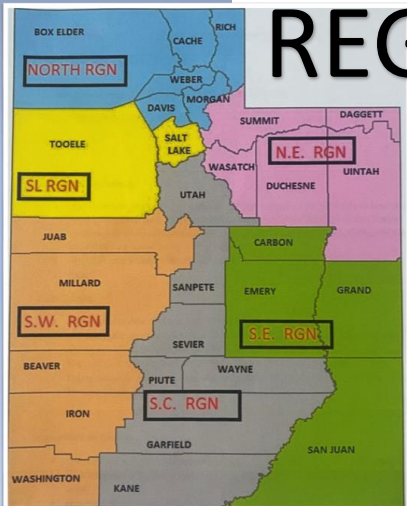
REGIONAL

NORTH
SALT LAKE
NORTHEAST
SOUTHWEST
SOUTH
CENTRAL
SOUT EAST



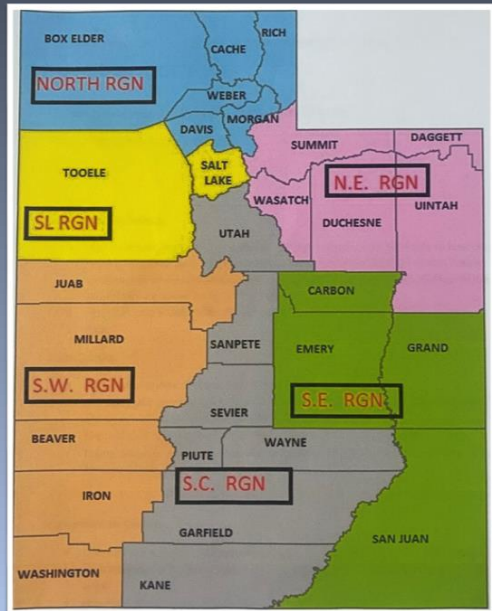
CALL

BEAR RIVER
WASATCH
OQUIRH
MOUNTAIN LAND
NORTHEAST
CENTRAL
SOUTHEAST
SOUTHWEST



Talkgroup Nomenclature

“Communicate Home”



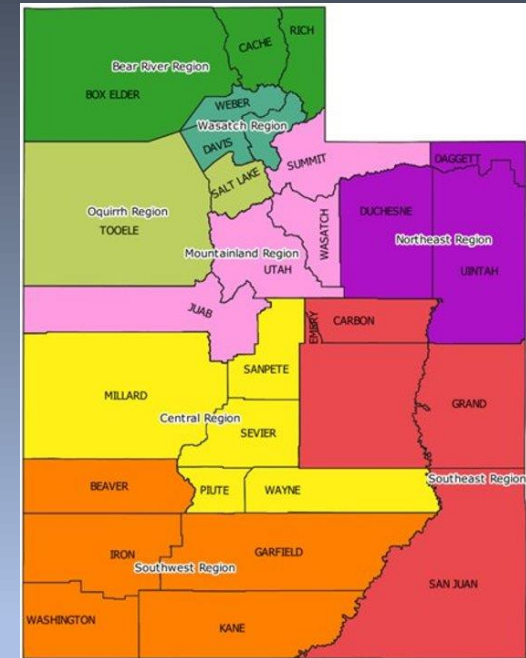
CALL

These are localized talkgroups designated for agencies to interoperate with each other on a temporary basis.

An example of this would be if an EMS in one county needs to talk to a PD from a different county and they don't have each other's talkgroup programmed in their radios.

Another example would be a local event that doesn't need to be handled on a main dispatch talkgroup.

This should be coordinated via dispatch.



Talkgroup Nomenclature



OPS

“Collaborative Communication”



OPS

“Collaborative County
interoperable Communication ”

Talkgroup Nomenclature

“Collaborative County
interoperable Communication ”



OPS

These are Countywide talkgroups designated for agencies to interoperate with each other on a temporary, County basis. OPS talkgroups are reserved for events and when multiple agencies from around the County need to interoperate outside their normal daily operations.

The new Fleet Map Increases the Number of OPS Talkgroups and moves the control over to each County. It also provides Special operations Talkgroups.



Talkgroup Nomenclature

“Collaborative Statewide Interoperable Communication”



EVENTS
1-16



BR TAC
WA TAC
OQ TAC
MT TAC

TAC
1-40

NE
CT
SW
SE

Talkgroup Nomenclature

“Collaborative Statewide Interoperable
Communication”



TAC

These are Statewide talkgroups designated for agencies to interoperate with each other on a temporary, Statewide basis. Event talkgroups are reserved for major events and when multiple agencies from around the State need to interoperate.

Examples of proper use would be interoperability exercises, natural disasters, Executive events, funerals for fallen officers/fire fighters, etc.

The new Fleet Map Increases the Number of TAC Talkgroups and moves the control over to each Region



Training Every User Statewide

Available
24/7 Online

Weekly Scheduled
In Person
Virtual



<https://www.uca911.org/Interoperability-Division>

Michael Veenendaal

385.910.4224

mveenendaal@uca911.org

