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# Alaska Land Mobile Radio Communications System Affiliation and Trunking

# Overview

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- Trunking review
- Affiliation
- Multisite Trunking
- Site Trunking

# ALMR Zones

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ALMR is a multiple-zone design with three zones

- Sites south of the Denali Highway are in Zone 1
- Sites north of the Denali Highway are in Zone 2
- Anchorage Wide Area Radio Network (AWARN) sites are in Zone 4
- Each zone has a Master Site and multiple radio frequency (RF) sites
  - Master Site for Zone 1 - Tudor Road
  - Master Site for Zone 2 - Ft Wainwright
  - Zone 3 - Reserved
  - Master Site for Zone 4 - Anchorage

# Trunking Review

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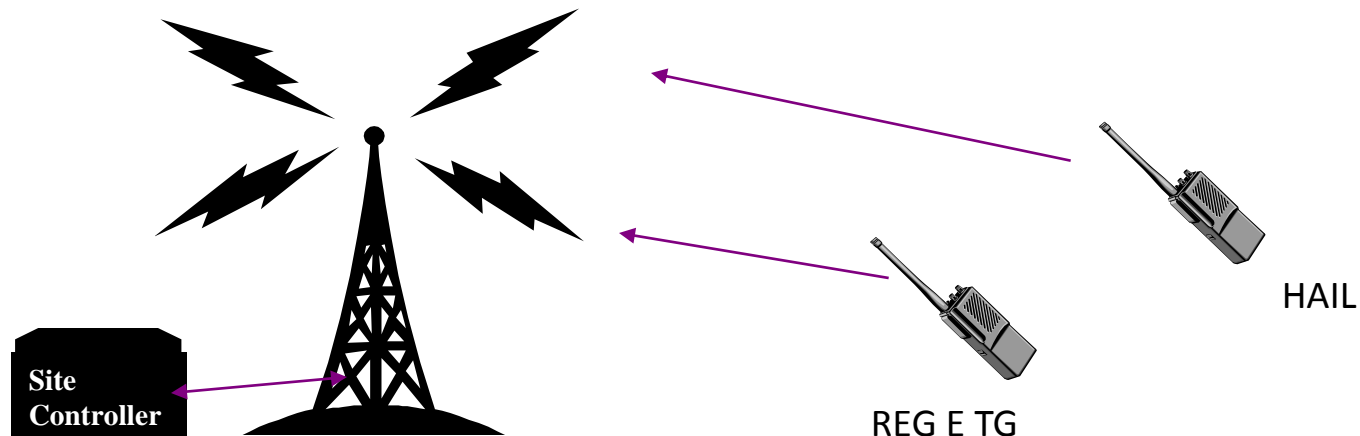
Each radio is recognized by the 'computer' or System Controller (aka **Site Controller**)

- When the transmitting user presses Push to Talk (PTT), the Site Controller broadcasts the user's talkgroup ID
- If other radios are on the same talkgroup, they receive the transmission

# Trunking Review (cont)

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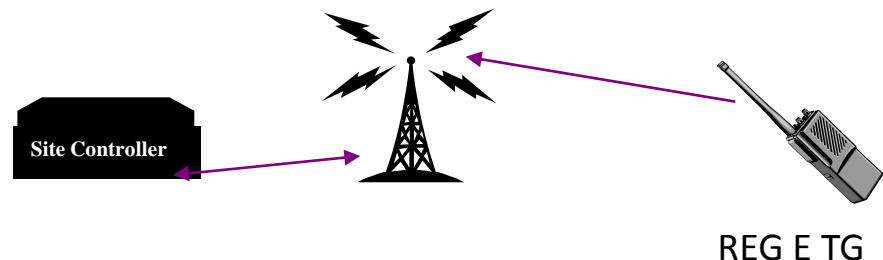
The Site Controller assigns a frequency (or trunk) at each repeater needed to accomplish transmission, then releases it after the transmission is complete



# Site Affiliation

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**Site Affiliation** is the method to control access to the site. When a radio is turned on, changes channels, or the PTT is pressed, the radio passes information to the site. This information allows the site to determine if the radio has permission to use the system, and where the transmission needs to go.



# Site Affiliation

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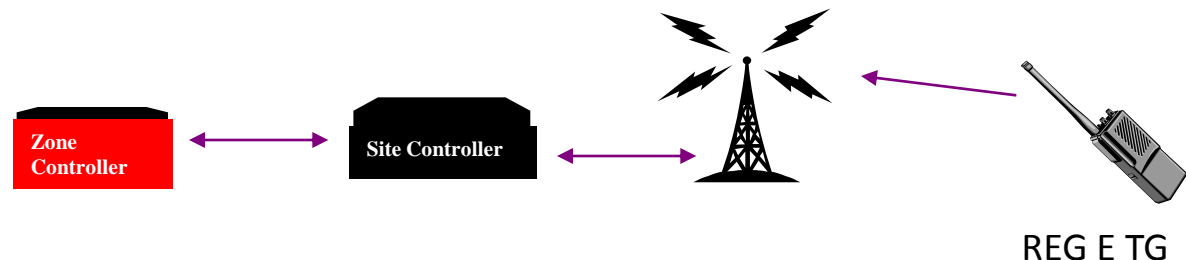
- Radios can only affiliate ONE talkgroup with ONE site at a time
- A radio transmits its information (Unit ID, Talkgroup ID, etc.) to the control channel of the affiliated site
- The site authorizes the radio for use on the system

# Multisite Trunking

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**Multi-Site Trunking** uses a computer network to manage many trunked sites.

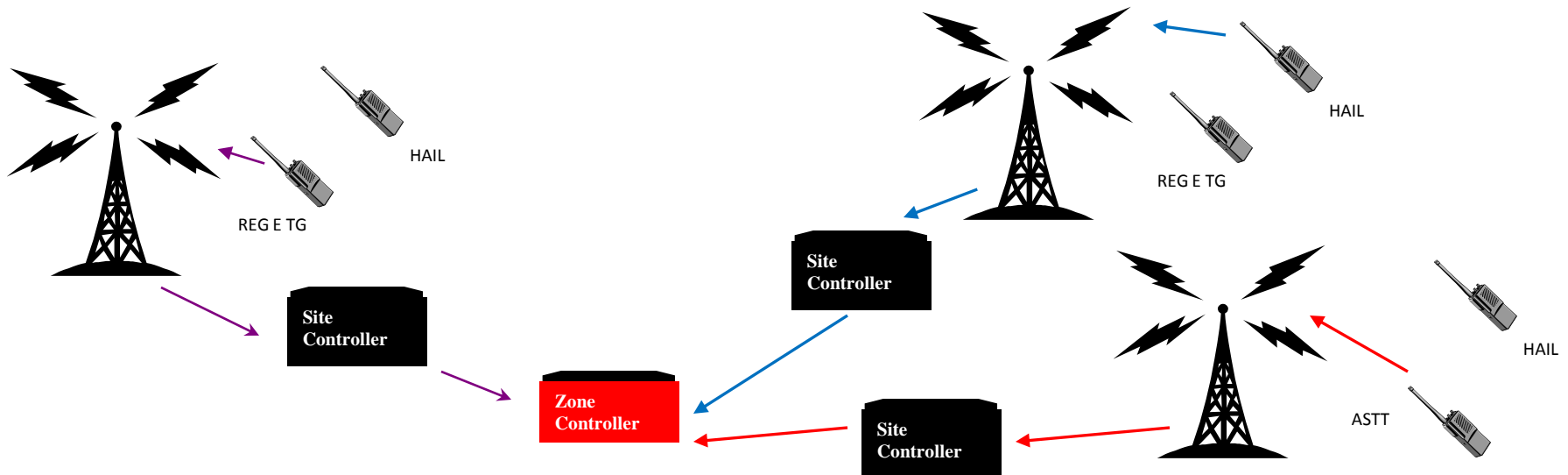
In multi-site trunking, the permissions are downloaded from the Zone Controller to the Site Controller.





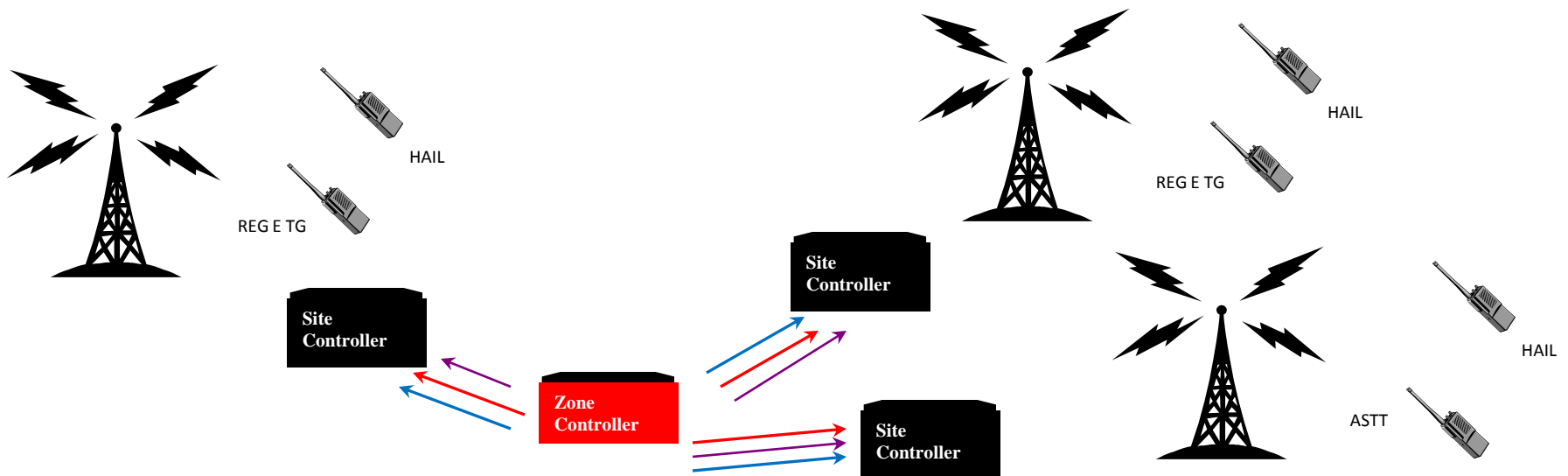
# Multi-site Trunking

When the transmitting user presses the PTT, the same information is passed from the individual Site Controller to the Zone Controller.



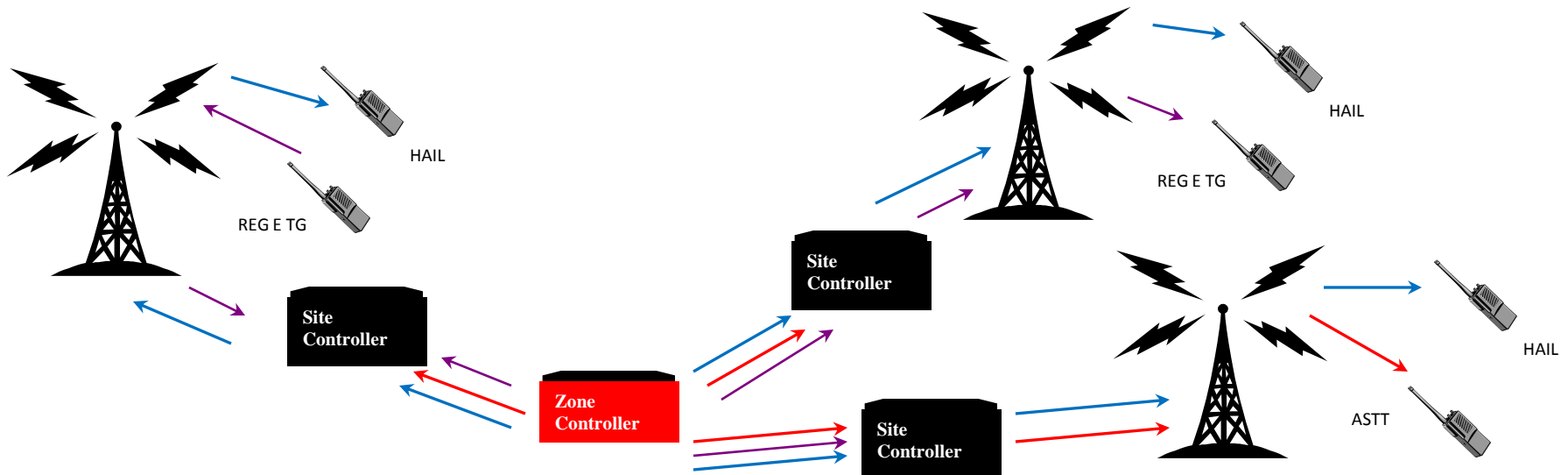
# Multisite Trunking

The Zone Controller broadcasts the information over the entire system.



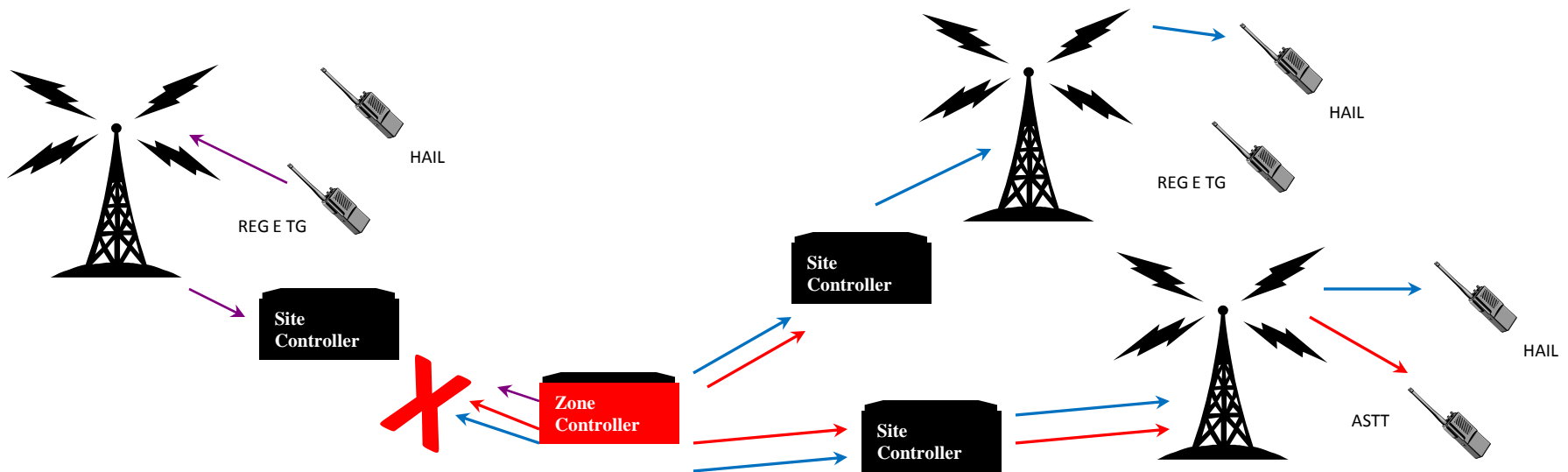
# Multisite Trunking

Any sites that have radios *affiliated* to the talkgroup will assign a repeater to send that transmission.



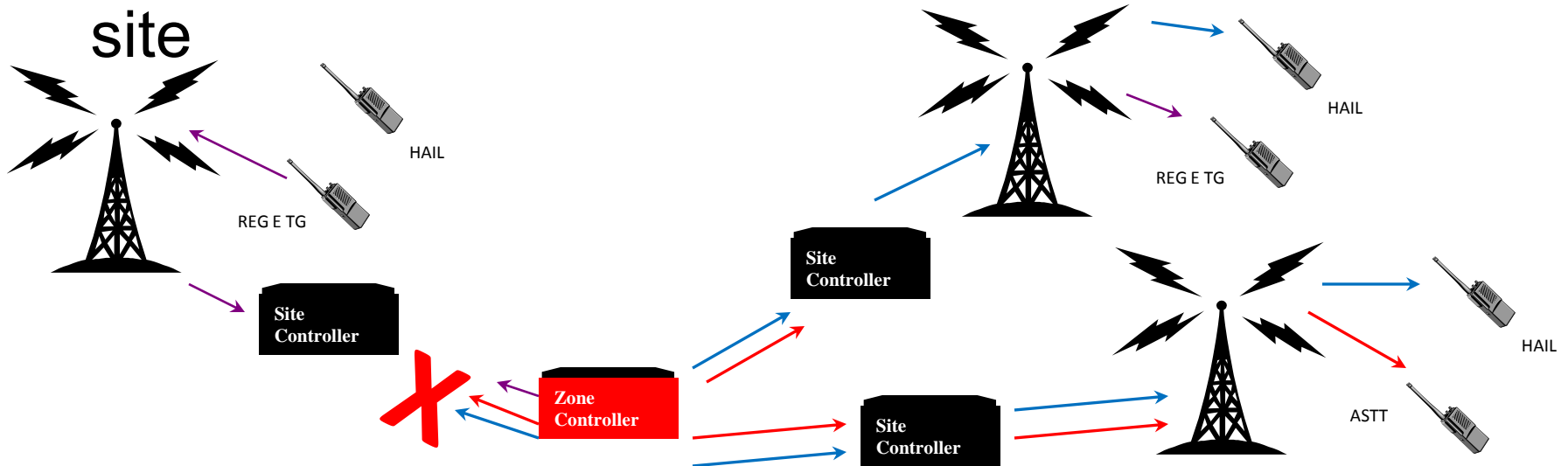
# Site Trunking

**Site Trunking** is a system fault condition that occurs when the communications link to the site is interrupted.



# Site Trunking

- A site continues to operate in a stand-alone manner and continues to process local traffic
- The site cannot share traffic with other sites
- The site controller notifies subscribers (radios) and warns them of the fault condition
- Most subscribers will search for the next available



# Questions

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