DMR Trunking Solution

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V1.0	2020/7/07			

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1 Overview

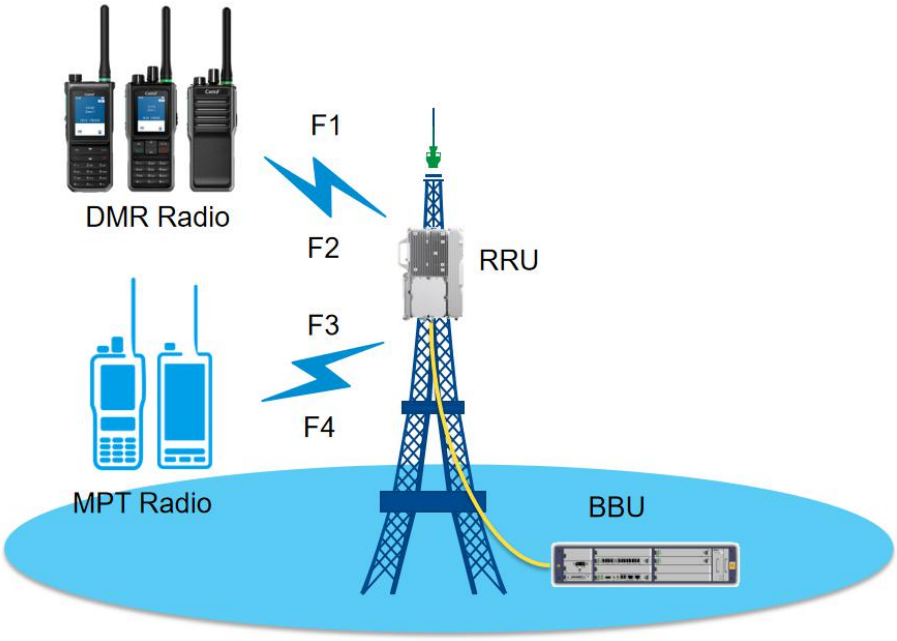
Caltta DMR trunking system is based on ETSI DMR Tier III standard, supporting the licensed DMR trunking devices to use central controllers to coordinate the communication automatically, the solution is designed to replace analog MPT trunking system.

Caltta DMR system consists of the base station and core network. A DMR base station, deploying our self-developed SDR platform, consists of separated BBUs and RRUs. This solution provides integrated networking of different modes and smooth evolution.

The DMR core network is the main control point of trunking services, and schedules trunking calls, including authenticating trunking users, establishing trunking calls such as single and group calls, etc.In this solution, the hot-plug board structure greatly reduces the CN size in the DMR trunking system, board-level redundancy backup greatly improves the reliability of CN equipment, and general carrier-class board greatly reduces the cost of system construction and maintenance.

2 DMR Trunking Single Site

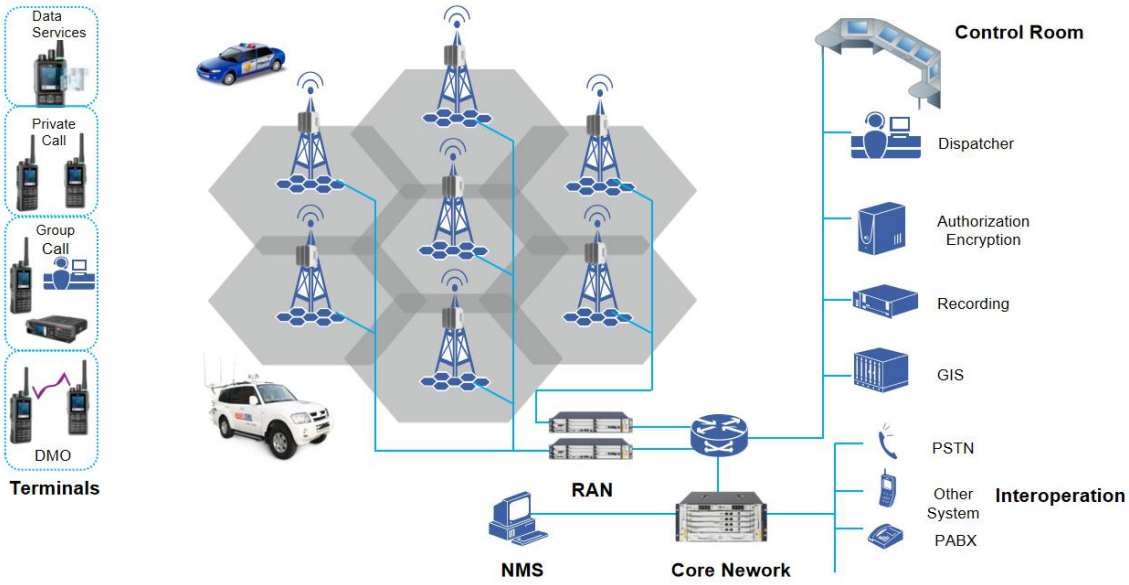
DMR trunking single site solution can provide dedicated coverage for application scenarios such as airports, ports, factories, mines, ports and so on, where users have high requirements for various trunking services including voice, text message, positioning, dispatching as well as high coverage quality.



Compatible with MPT trunking radio, the solution is suitable for smooth upgrade of analog to digital migration.

3 DMR Trunking Multiple Sites

DMR trunking multiple sites solution is suitable for building up large-scale (national, provincial or city level) trunking network for application scenarios such as public safety, emergency communication and etc. Users of the solution have unified industry standards and frequency planning, also have relative higher requirements for trunking services such as network security, coverage, voice, positioning, and dispatching.



DMR trunking multiple sites solution supports flexible networking, from small-scale trunking network (no more than 16 base stations) to large-scale trunking network with hierarchical core network structure, providing group call, private call, handover, text message, roaming, registration functions and other dispatching services such as dynamic group numbering assignment, positioning and kill/stun/revive with authentication.

4 DMR Trunking Core Network

Caltta provides a series of DMR trunking core network products to meet different customer requirements. eTC10 is a compact board that can be installed in the base station, it is capable to support 1000 subscribers and up to 8 base stations. eTC 100 is based on commercial PC server

hardware, and can support 2000 subscribers and up to 16 base stations. eTC 220 adopts high-density server platform and can support maximum 60000 subscribers and up to 256 base stations. eTC 500 and eTC 1000 adopt carrier class ATCA (Advanced Telecommunications Computing Architecture) architecture and can support maximum 60000 subscribers and up to 256 base stations.

eTC 10

eTC 100

eTC 220

eTC 500

eTC 1000

5 DMR Trunking SDR Base Station

Caltta DMR trunking system uses the SDR (Software Defined Radio) base station for the radio network coverage. The SDR base station comprises of BBU (Base Band Unit) and RRU (Remote Radio Unit), it has advanced features of integrated networking, low power consumption, large coverage and low TCO.

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 B8200	 R8881

6 DMR Trunking Radio

Caltta provides a variety of DMR trunking radios, including professional portable radio PH790 and PH700, super slim portable radio Z9, muti-mode portable radio GH900 and mobile radio PM790. All the radios can be programmed and set upon customer needs to work in DMR trunking mode or other modes.

7 DMR Trunking Solution Highlights

- Resilient and easy networking, saving construction and maintenance costs;
- Flexible channel assignment and load balancing to avoid congestion caused by uneven load;
- Supports reserved dedicated positioning channels to ensure that voice and positioning service free of conflict with each other;
- Avoid the risk of a single point failure, and individual channel failure does not affect site use;
- Increased network capacity and broadened coverage.