Mass Casualty Commission

PUBLIC PROCEEDING

MASS CASUALTY COMMISSION
COMMISSION DES PERTES MASSIVES

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NOW SPEAKING

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COMMISSION COUNSEL

Exhibits

- **TMR2 Radio Communications System in Nova Scotia**
- **All Supporting Documentation**

Subject Matter

- **Overview of the current TMR2 radio communication system used by first responder and provincial agencies in Nova Scotia and the history of the development of the current TMR2 system.**

- **Focus is on the capabilities of the TMR2 system and how it works.**

Acronyms

BMI	Bell Mobility Inc.
BMR	Bell Mobility Radio
TMR2	Trunked Mobile Radio 2 System
RINSAC	Radio Interoperability Nova Scotia Advisory Council
PSFC	Public Safety Field Communications
MPSN	Maritime Public Safety Network
PTT	Permission to Talk
RTT	Request to Talk
ERTT	Emergency Request to Talk

TMR2 Radio Communications System in Nova Scotia

Overview of the TMR2 System

- Trunked Mobile Radio 2 (TMR2) system, provided by Bell Mobility Inc. (BMI), is primary radio transmission service used in Nova Scotia.

- Allows authorized users to communicate with one another on an encrypted or unencrypted radio platform by utilizing established talkgroups. This ability to communicate with many different users is referred to as **interoperability**.

  - Currently used by:
    - All RCMP and municipal police forces (as of 2021)
    - Fire fighters
    - Emergency medical transport
    - Emergency and disaster management services
    - Most public works services of the provincial government

History of TMR Systems in Nova Scotia

TMR
First Generation (2000-2015)

- Went into service in 2001
- BMI selected through the procurement process to provide the TMR system
- Halifax Regional Municipality negotiated a separate agreement with BMI for its use of the TMR system

TMR2
Second Generation (2015-present)

- TMR2 went live in Nova Scotia in June 2015
- All agencies in Nova Scotia previously on TMR switched to TMR2
- Most agencies previously not on the TMR system also migrated to the TMR2 system
- Agencies in New Brunswick and Prince Edward Island are also connected to specific talkgroups

Governance of TMR2 System

- Coordination of implementation and oversight of the TMR2 system is the responsibility of Public Safety Field Communications, an office of the provincial Department of Internal Services.

- In addition to policy, training and governance of the TMR2 system, the PFSC is responsible for asset management which may include arranging for radios to be provided to volunteer organizations or helping improve interoperability with the development of talkgroups or offering training services.

TMR2 System Terminology

Talkgroups and Fleetmaps

Mutual Aid- Law Enforcement-Maritime-Common

Encrypted/Unencrypted

Key Management Facility (KMF)

Interoperability

TMR2 System Terminology

Towers/Channels/Talkpads

Key Management Facility (KMF)

"In the clear"

Patching

First Responder Radio Use and Training

TRAINING

- PSFC ensures that initial training is provided to all users when an agency first joins TMR2. PSFC also provides refresher training upon request.

EXERCISES

- Practice exercises and equipment testing also occur with different agencies at different times. These exercises are arranged by the agency.

Radio Problems and their Causes

Problem	Cause
Miscommunication/Inaudibility	Lack of plain language, heavy use of acronyms, background noise such as wind or sirens, failure of caller to self-identify and/or of recipient to acknowledge receipt
Bonging/Bonking	Issues connecting to the tower, trying to speak over another and also sometimes issues connecting to the tower
Busies	All local tower channels are currently hosting a conversation
User practices can cause TMR2 capacity overload	Listening to a talkgroup when there is no requirement to do so
User confusion regarding the meaning of radio sounds or location of talkgroups	Failure to distinguish between radio sounds and unfamiliar with where to find a talkgroup on a radio

Radio System Tones

GO-AHEAD

- A fast, high pitched three-note tone (triple chirp) that tells you the radio is connected to the system and you can 'go-ahead' and talk.

BUSY

- A mid-range beep tone about every half-second. This signal means all the repeaters on the site you are connected with are currently busy with other radio traffic. Sounds like a busy telephone line.

BONK

- A low-pitch short sound that means the user is trying to speak over another person or the radio has lost contact with the tower.

BONG

- A low-pitch repeated long tone that means that the radio has lost contact with the tower.

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