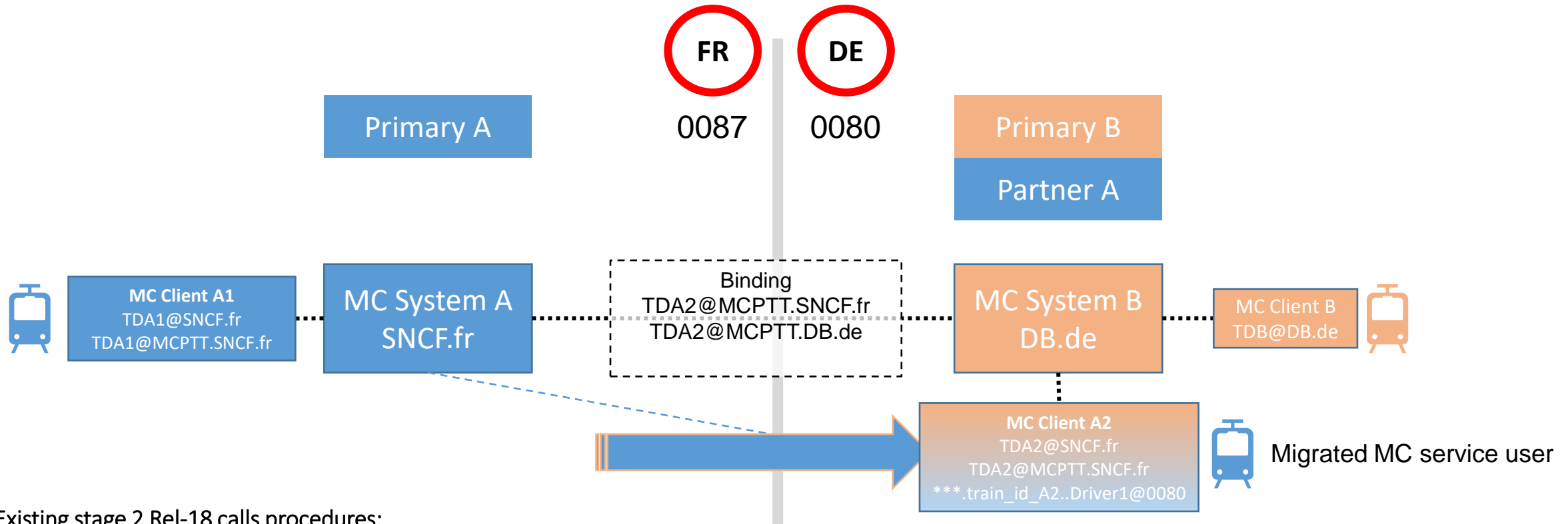




Migration and interconnection scenarios for Rail/FRMCS

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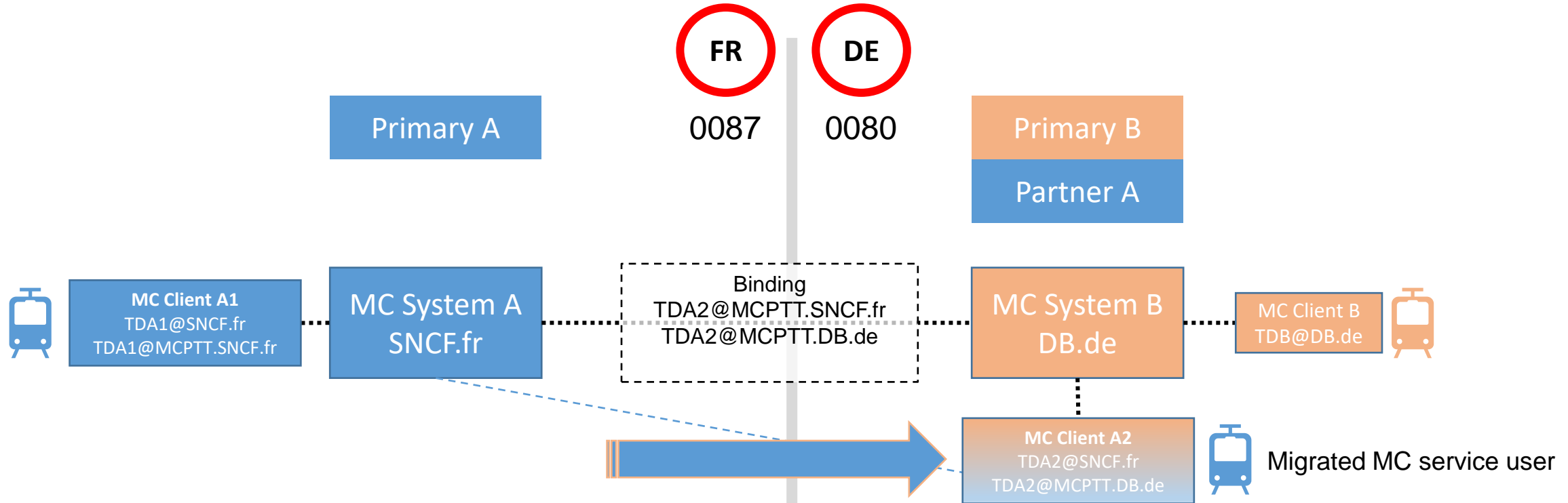
MCS Migration scenarios for Rail



Existing stage 2 Rel-18 calls procedures:

- (1) Primary MC System user migrating to Partner MC system while **ongoing group communication** in Primary MC system
- (2) Primary MC System user migrating to Partner MC system while **ongoing private communication** in Primary MC system
- (3) **Private call using destination FA** from Primary MC System user to migrated MC service user in Partner MC System **FA resolution is wrongly defined – see backup slide**
- (4) **Private call using MC service ID** of Primary MC system from Primary MC System user to migrated MC service user in Partner MC System

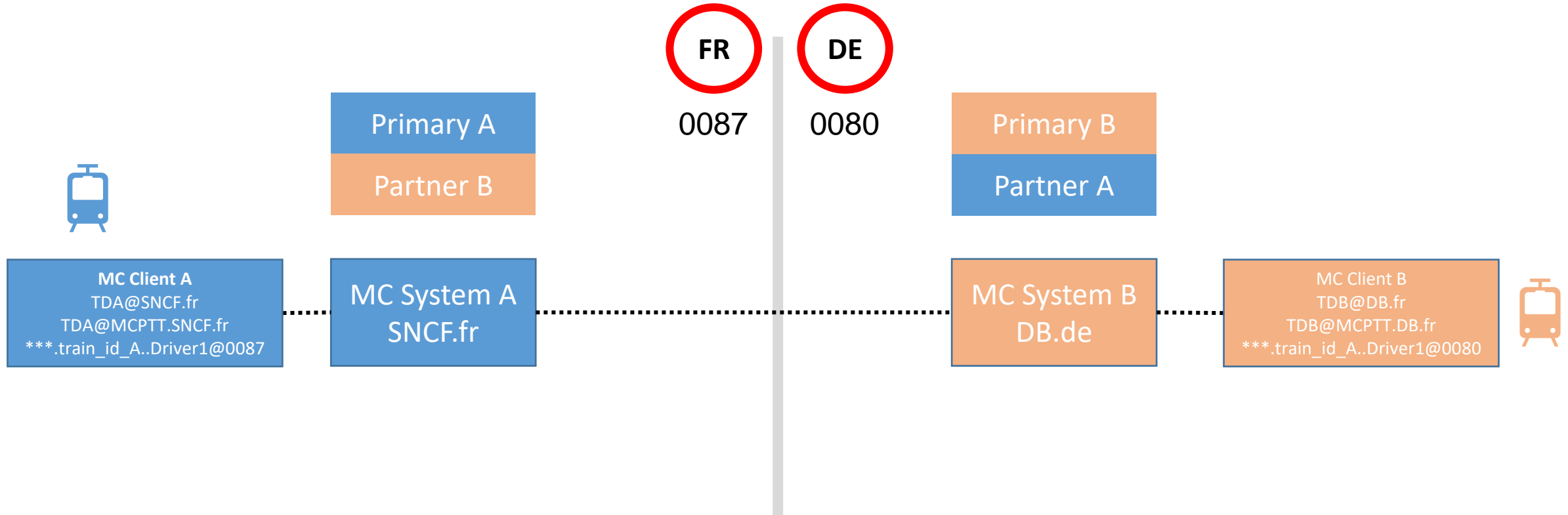
MCS Migration scenarios for Rail



Missing stage 2 Rel-18 calls procedures: migrated MC Service user as calling party to MC Service users in primary MC system:

- (1) Private call using FA from migrated MC service user in Partner MC System to Primary MC System user
- (2) Private call using MC service ID of Primary MC system from migrated MC service user in Partner MC System to Primary MC System user
- (3) Group (voice) communications

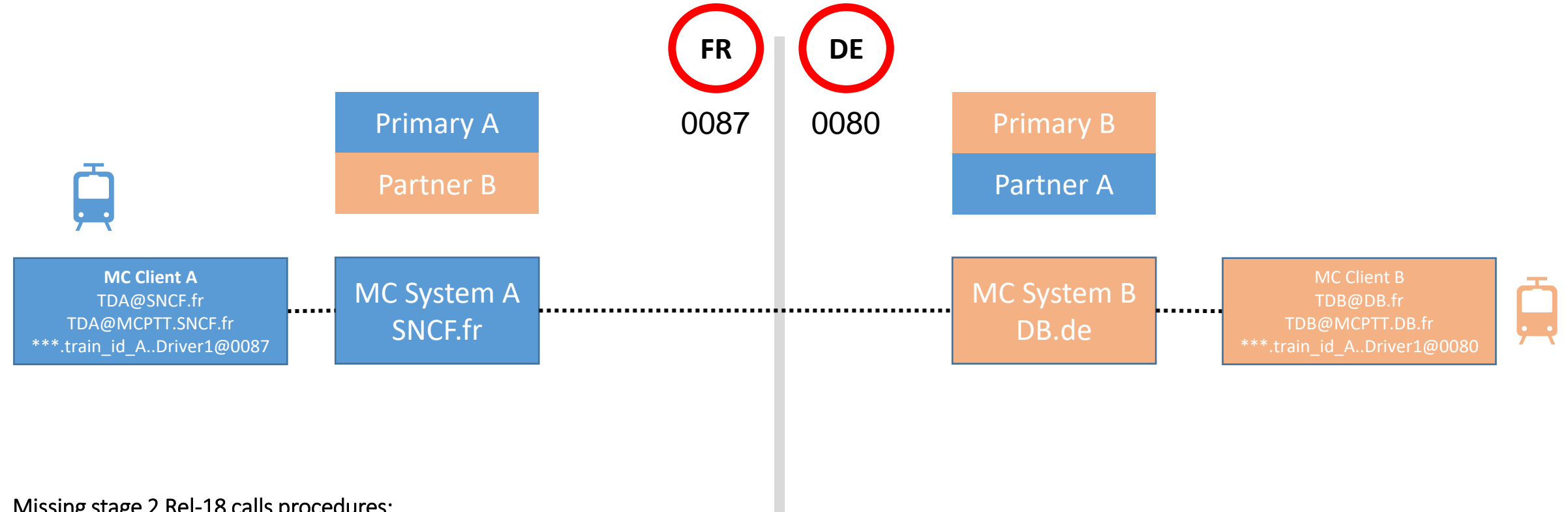
MCS Interconnection scenarios for Rail



Existing stage 2 Rel-18 calls procedures:

- (1) MC Private call between MC service users from interconnected MC systems.
- (2) MC group call between MC service users from interconnected MC systems.

MCS Interconnection scenarios for Rail



Missing stage 2 Rel-18 calls procedures:

- (1) MCDATA IPCon Private call between MC service users from interconnected MC systems.
- (2) MCPTT Private call between MC service users from interconnected MC systems using FA as target user
- (3) Ad-hoc group emergency alert & ad hoc group voice/data calls over interconnected MC systems
- (4) Multi-user talker control over interconnected MC systems



Backup slides

Migration - Private call using FA towards a partner MC system:

FA resolution is wrongly defined.

- 23.280 V18.2.0 cl. 8.1.5 on FA: Functional alias takes a form of a URI.
- 23.280 V18.4.0 cl. 8.1.5 on FA (CR0335 from AT&T): Functional alias takes a form of a URI where the host part of the URI shall identify the **home MC system MC service functional alias controlling server**.

Problem statement:

When a user has migrated to a partner MC system, none of the users in primary MC system are aware of this migration.

When a user has migrated to a partner MC system, he should be addressable from users in primary MC system using FA defined in primary system. Translation should occur transparently to the user in primary & partner MC systems.

We would expect similar behaviour as described for generic private call towards a migrated MC service user in 23.280 10.16.5.1: *“For callers that are not aware of the migrated MC service user’s new MC service ID, the migrated MC service user is also reachable by his/her MC service ID assigned by the primary MC system via redirection done by the primary MC system’s MC service server.”*

Potential solution:

When receiving an MC service private call request, the MC service server of primary MC system knows that the user has migrated to a partner MC system. The host part of FA could be changed to the partner MC system (Note: user part stays the same in both primary and partner MC systems). **To be developed**.



Backup slides

Interconnection – ad hoc group communications within multiple MC systems:

Criteria resolution is wrongly defined.

- 23.379 V18.5.0 cl. 10.19.3.2 on Ad hoc group call procedures in multiple MCPTT systems – participants list determined by the server:
Ad hoc group call setup step 6: “MCPTT server 2 evaluates the **criteria** and determines the participants **satisfying the criteria** (i.e., MCPTT client 3 and MCPTT client 4) and sends the response containing the list of MCPTT users satisfying the criteria. »

Problem statement:

Criteria are set by Railway Infrastructure Managers i.e., criteria are set per MC system (policy rules are different in multiple MC systems). We may need to add some text in the call flow to allow the partner MC system to define its own criteria/policy rules.

Potential solution:

To be developed.

Backup slides

- 23.280:
- Interconnection: 5.2.10, 10.2.7, 10.6.2, 10.14
 - Migration: 5.2.9, 7.4.2.2.11, 10.1.6, 10.6.3, 10.16:
 - 10.6.3: when migrating, automatic deactivation of active FA in primary MC systems or keep them active?
 - 10.6.3.3 step 5: how the FA controlling server 1 determine that FA belongs to partner MC system?

- 23.282:
- Interconnection: 7.13.6.1 (MCData message store), 7.5.2.4.3 (FD), 7.5.2.8.3 (file removal)
 - Migration: 7.13.6.2 (MCData message store)
 - MCData user profile configuration data: list of partner MCData systems for migration
 - MCData system ID
 - access information (see 23.280 initial UE config data →): GMS is missing! FAMS part of CMS? Stage 3 LMS & CSC-24 (LMS-CMS) procedures are also missing!

- 23.379:
- Interconnection
 - Migration
 - MCPTT user profile configuration data: list of partner MCPTT systems for migration
 - MCPTT system ID
 - access information (see 23.280 initial UE config data →): GMS is missing! FAMS part of CMS? Stage 3 LMS & CSC-24 (LMS-CMS) procedures are also missing!

Table A.6-1: Initial MC service UE configuration data (on-network)

Reference	Parameter description
Subclause 10.1.1	PDN connectivity information
	> HPLMN ID and optionally VPLMN ID to which the data pertains
	> MC services PDN
	>> APN
	>> PDN access credentials
	> MC common core services PDN
	>> APN
	>> PDN access credentials
	> MC identity management service PDN
	>> PDN access credentials
Subclause 10.1.1	Application plane server identity information
	> Identity management server
	>> Server URI
	> Configuration management server
	>> Server URI
	> Key management server
	>> Server URI (also known as KMSUri for security domain managed by KMS)
	> Indication of whether the UE shall use IPv4 or IPv6 for on-network MCPTT
	> MCPTT Server
	>> Server URI
	> Indication of whether the UE shall use IPv4 or IPv6 for on-network MCData
	> MCData Server
	>> Server URI
	> Indication of whether the UE shall use IPv4 or IPv6 for on-network MCVideo
	> MCVideo Server
	>> Server URI
	> Location management server
	>> Server URI
Subclause 10.1.1	Operational information
	> MC service UE label (see NOTE)
NOTE: The MC service label is optional.	