3GPP TSG-CT WG1 Meeting #138-e **C1-225784**
E-Meeting, 10th – 14th October 2022

Source:	**Nokia, Nokia Shanghai Bell**
Title:	**MC migration Rel-18 work analysis**
Agenda item:	**18.1.2**
Document for:	**INFORMATION**

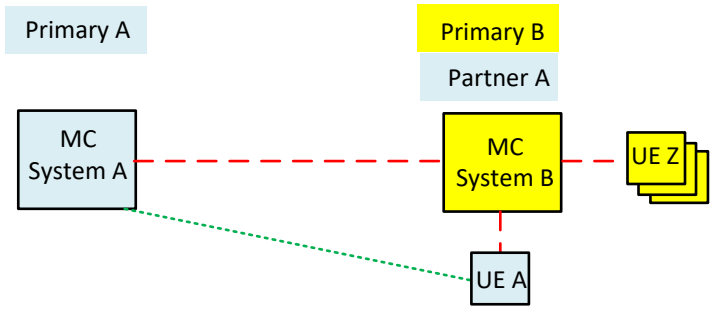
Stage-2 MC migration WIDs

Code	Acronym	Title	Rel.	Group	WID	Stage-2 rapporteur	Completion Rate
760049	MCSMI	Mission critical system migration and interconnection	15	S6	**SP-170577**	Motorola solutions	100%
800019	eMCSMI	Enhanced Mission Critical System Migration and Interconnection	16	S6	**SP-180379**	Motorola solutions	100%
950025	IRail	Interconnection and Migration Aspects for Railways	18	S6	**SP-220098**	Nokia	60%

- Rel-15 had started the work but only some limited aspects had been addressed
- In stage-3,
  - only interconnection aspects have been addressed in Rel-17
  - Migration has not been tackled at all

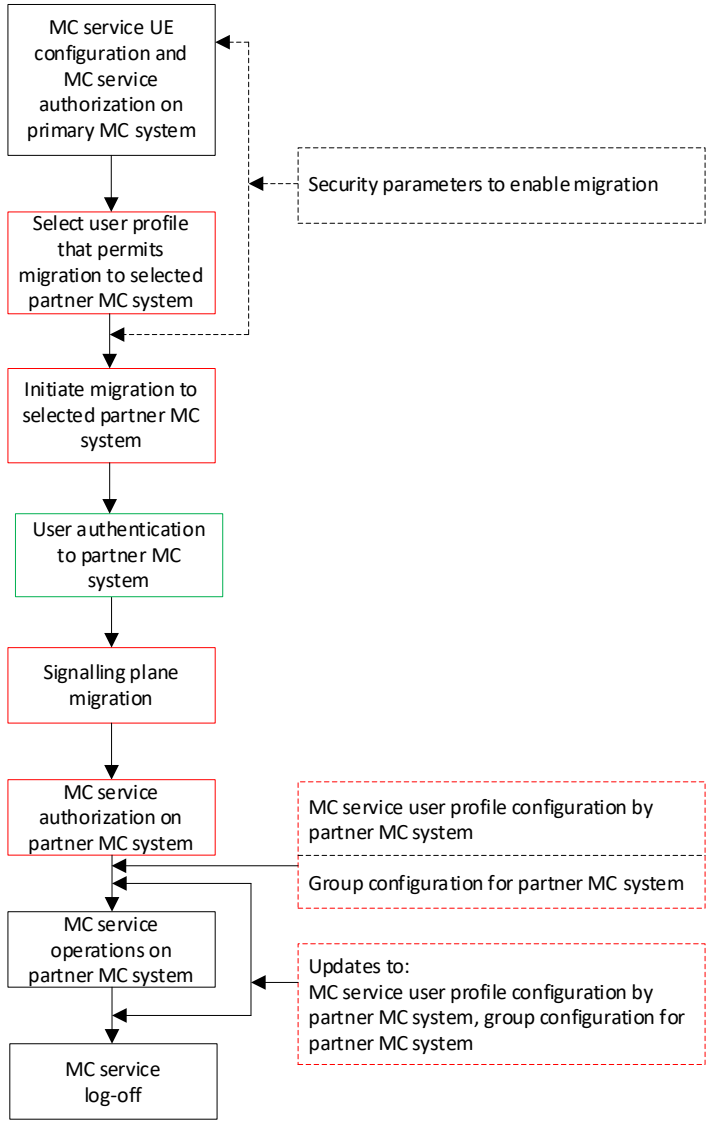
Migration

- Operational support across mission critical systems in different security domains operated by different mission critical organizations
- Trains are crossing the border much more frequent than in public safety scenarios, especially the need to continue the communication when crossing borders is essential for railway operations
- Related Rel-15 study and Rel-18 study on railways-related optimizations
- S6-222198 Discussion paper analysing rail communication when trains are abroad (Union Inter. Chemins de Fer)
- S6-222053 informative annex on migration process and the related procedures. Set of missing procedures identified and planned to be specified

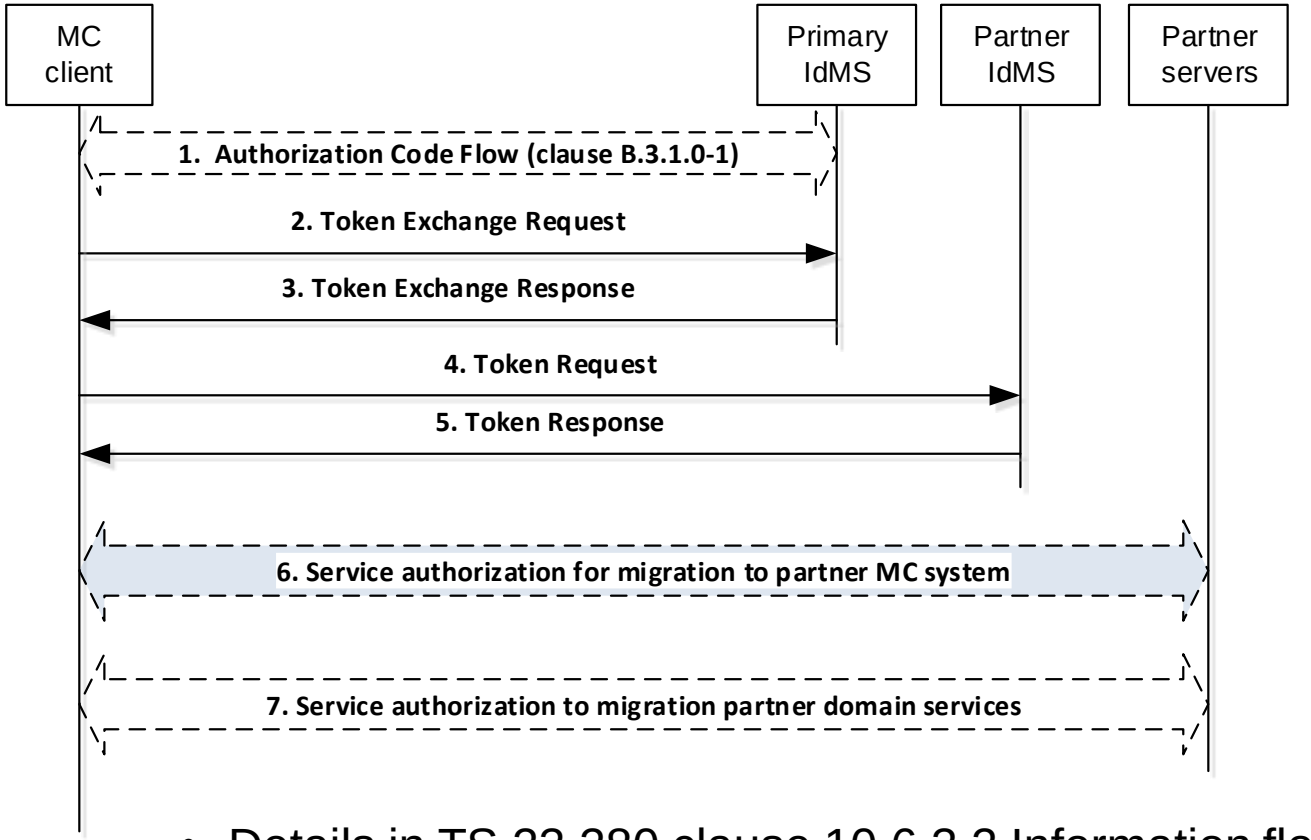


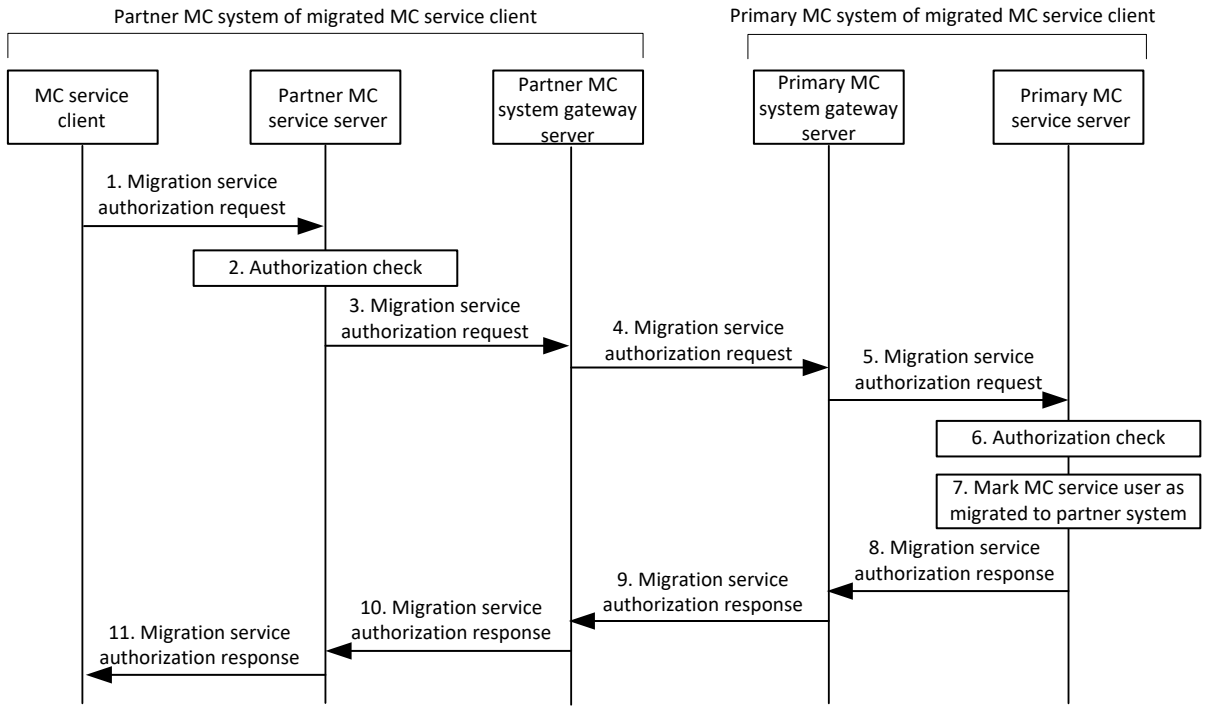
Rel-16 Basic migration procedure

- Red means work is needed, Green means existing in stage-3 specs
- No configuration exists for the partner systems
- No migration-related procedures. Expected impact on
  - client procedures for migration request
  - server procedures on primary system forwarding migration requests
- User authentication is captured in TS 24.482 (see Token request from/to an IdM client to a partner system)
- No support of MC user migration service authentication and authorization (see 5.1.5 of TS 33.180)



User authentication and service authorization





- Details in TS 23.280 clause 10.6.3.2 Information flows for migrated service authorization

Interconnection and Migration Aspects for Railways- IRail Rel 18

1. Private call using a functional alias towards a partner MC system (see TS 23.280 10.16.3**)**
2. Support of private call forwarding between MCPTT systems. (Rel 17 Feature –Kontron)
3. Support of private call transfer between MCPTT systems. (Rel 17 Feature –Kontron)

Interconnection extensions

4. Migration towards another MC system during ongoing private communications. (see TS 23.280 10.16.2.3**)**
5. Migration towards another MC system during ongoing group communications. (see TS 23.280 10.16.2**)**
6. Optimize connectivity between MC systems for media and signalling routing and the IP connectivity between MC systems.

optimizations

7. Functional architecture enhancements to support location information for interconnected MC systems, including information flows and procedures.
8. Support of migration for MC service users towards an MC system when the primary and the partner MC system are not interconnected. (Could be alternatively covered by **FS_MCShAC**)

FA resolution at partner system

- Not a migration, but interconnection aspect
- Resolution mechanism has been specified in Rel. 16/17
- Unclear how the FA controlling server knows where the FA is activated

"5.The MC service functional alias controlling server 1 determines that the functional alias belongs to the partner MC system and forwards the MC service functional alias resolution request message to MC service functional alias controlling server 2."

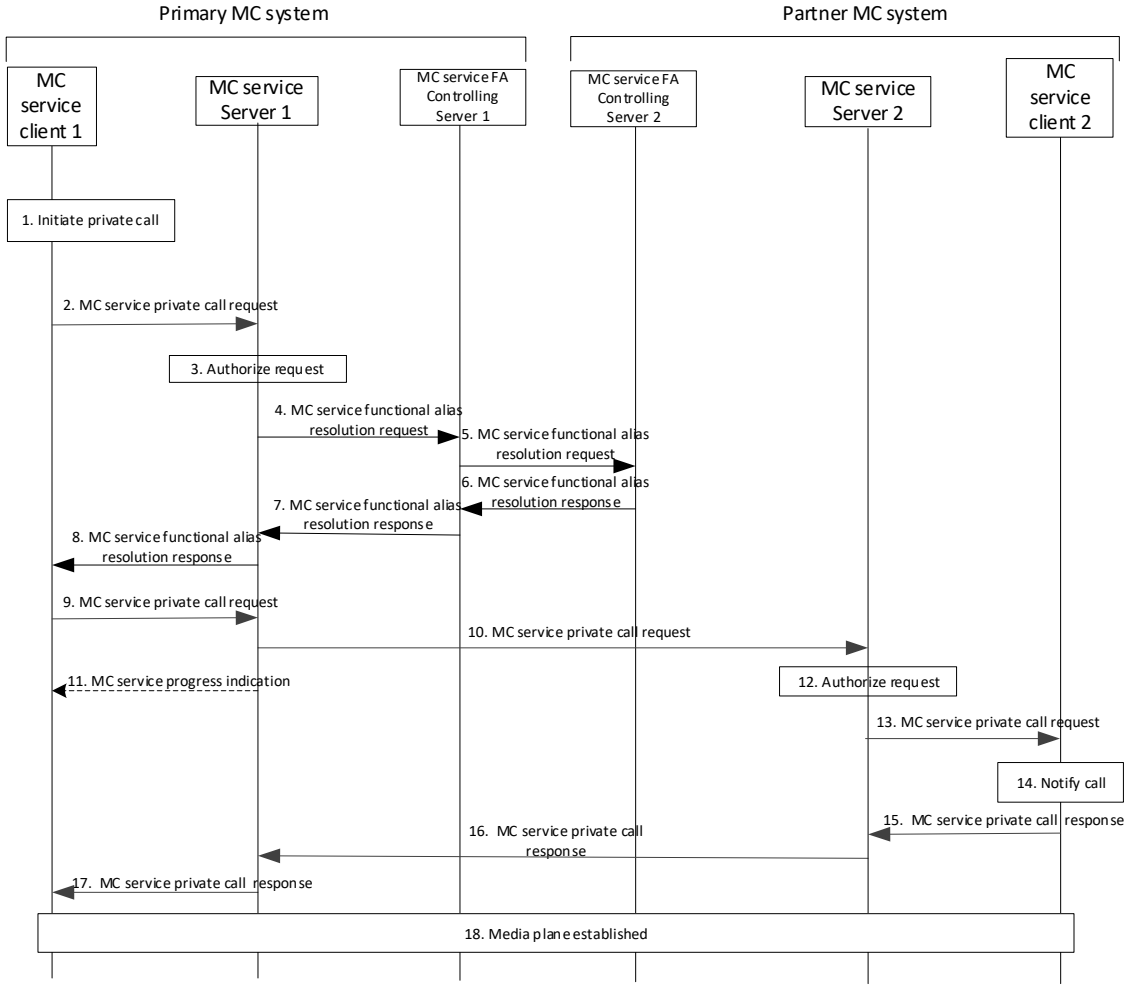


Figure 10.16.3.3-1: Private call setup in automatic commencement mode, users in multiple MC systems

Prioritization/organization of work

- MCPTT and for MCData only IP connectivity
- Start from the necessary configuration regarding partner systems
- Continue with service authorization and migration procedures

minimum necessary functionality

- Support interconnection enhancements, e.g., FAs in a partner system

- Continue with the part of Rel-18 optimizations of IRAIL