



International Data Distribution

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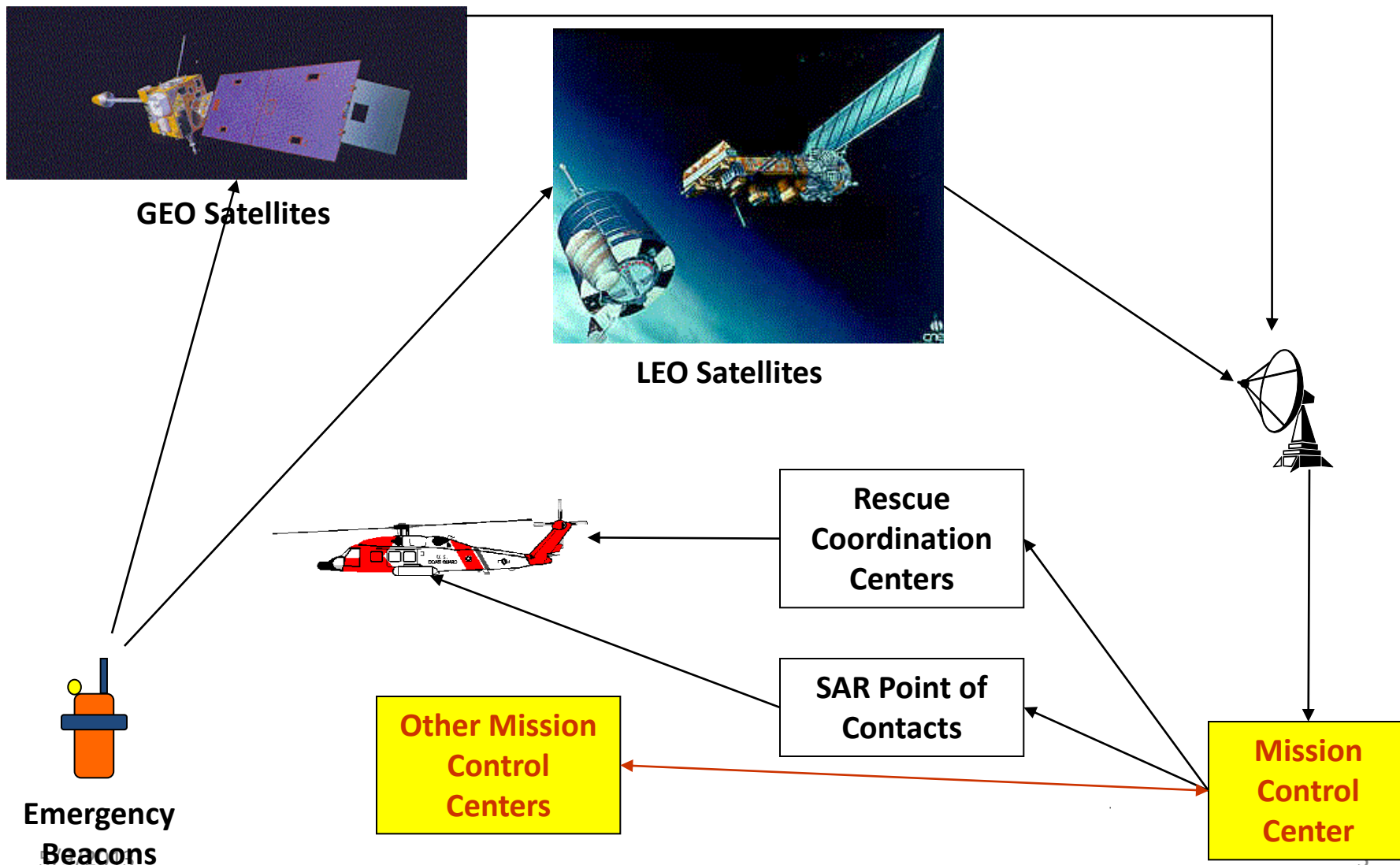


MCC to MCC Data Distribution

- Cospas-Sarsat was designed to:
 - Save lives through
 - Early detection of distress
 - Minimizing search time
 - Quick recovery
 - Consider
 - Number of extended searches - past vs. present
 - Cost of an extended search



MCC to MCC Data Distribution



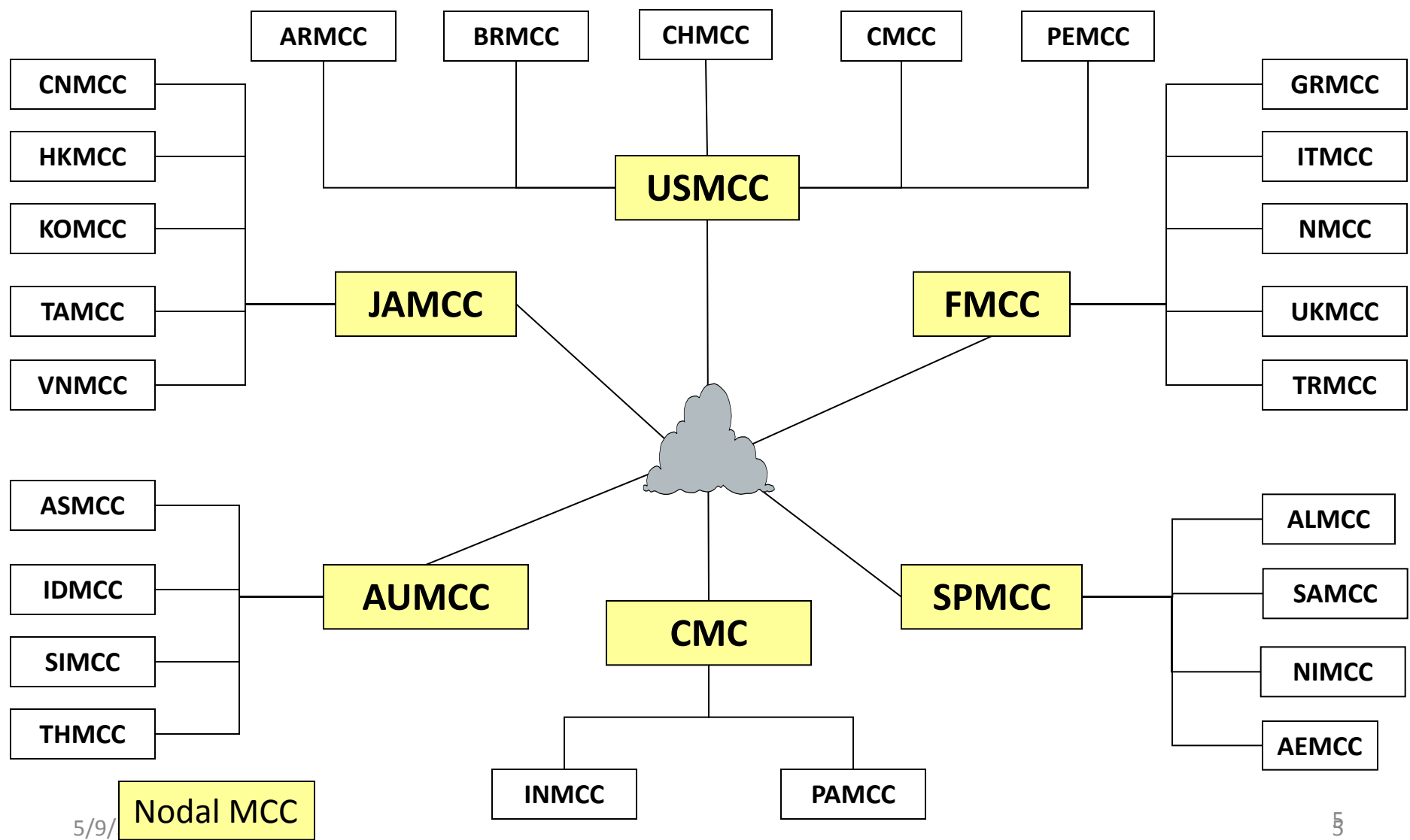


MCC to MCC Data Distribution

- Data Distribution Procedures are spelled out in the Cospas-Sarsat Data Distribution Plan (DDP), A.001
- Generally alerts are distributed based on location of alert
- Unlocated alerts are distributed based on the country code of the beacon
- Notification of Country of Registry (*NOCR*) messages are distributed based:
 - on location of the beacon and
 - the country code of the beacon
- Each Beacon Event (TCA – Satellite - Beacon) is only sent once
- SSAS alerts are distributed based on country code
- No messages are distributed after ambiguity resolution (composite)



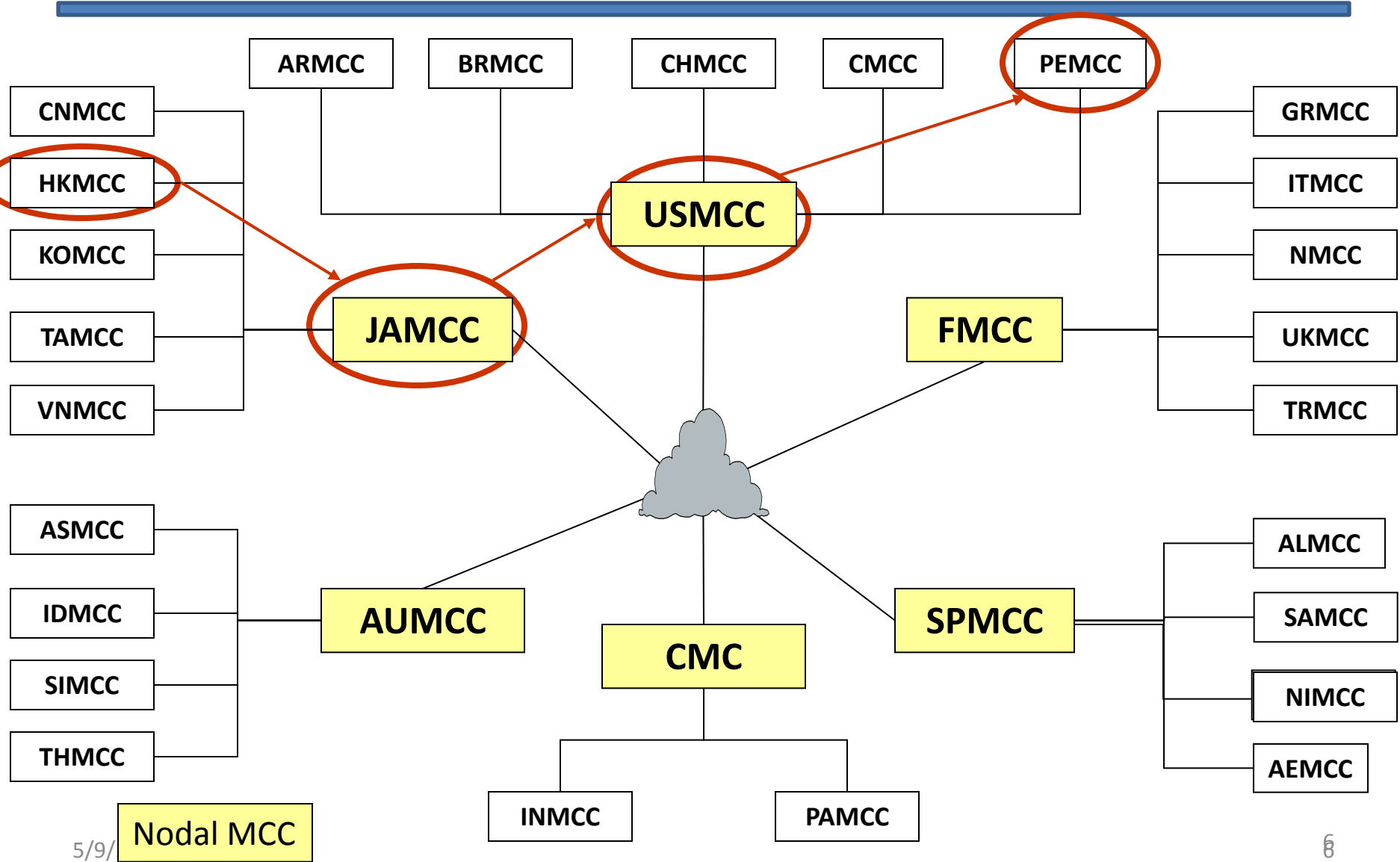
MCC to MCC Data Distribution Data Distribution Network





MCC to MCC Data Distribution

Unlocated Alert detected by HKMCC with Peru country code





MCC to MCC Data Distribution

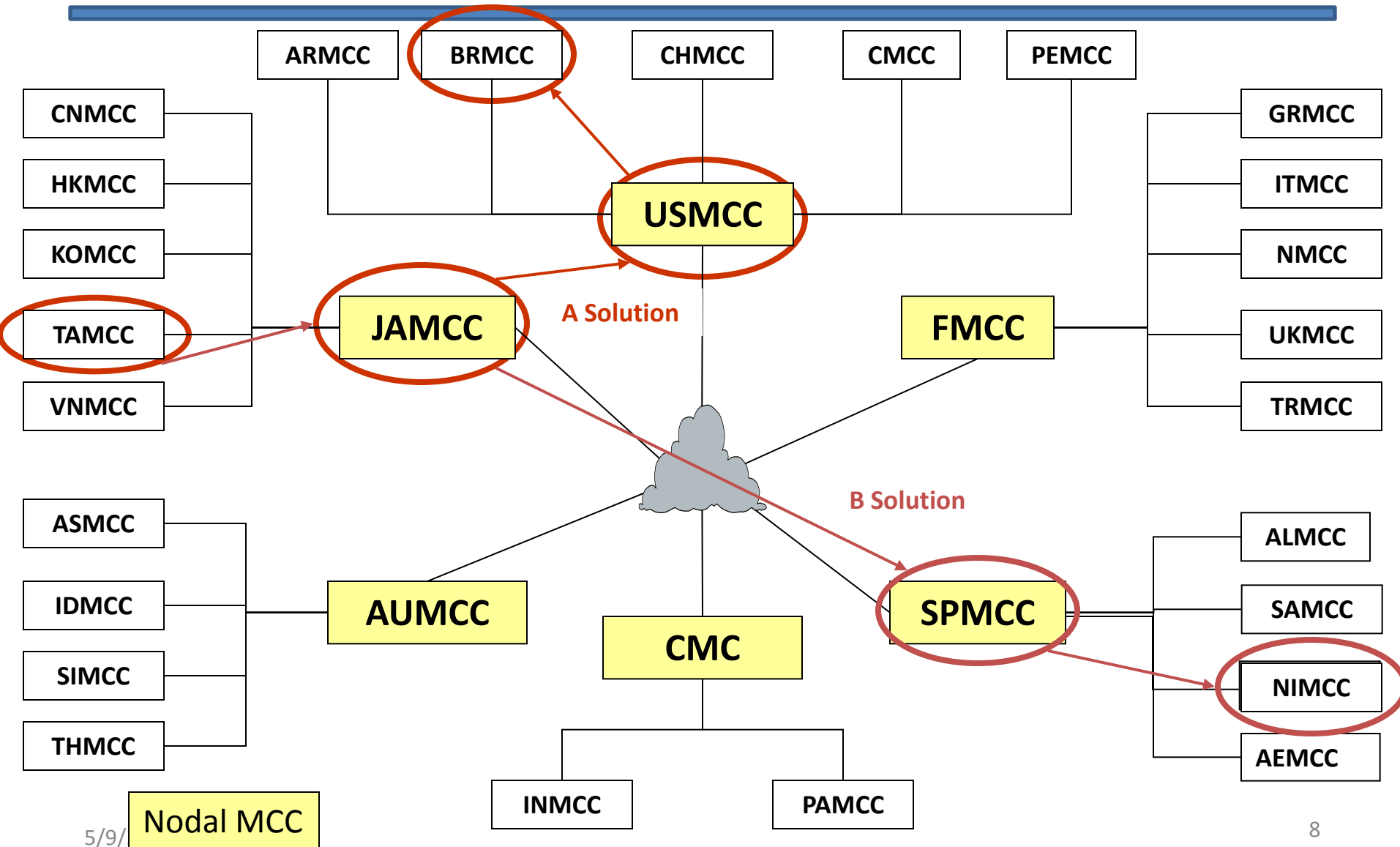
Unlocated Alert Example

Unlocated Alert detected by HKMCC with Peru country code

- HKMCC sends to JAMCC (if HKMCC has not previously sent the “beacon event” to JAMCC).
- JAMCC sends to USMCC (if JAMCC has not previously sent the “beacon event” to USMCC).
- USMCC sends to PEMCC (if USMCC has not previously sent the “beacon event” to PEMCC).
- PEMCC sends to RCC or SPOC (if PEMCC has not previously sent the “beacon event” to RCC or SPOC), based on national procedures.

MCC to MCC Data Distribution

Alert detected by HKMCC with location in BRMCC & NIMCC's Service Areas





MCC to MCC Data Distribution

First Doppler Located alert Example

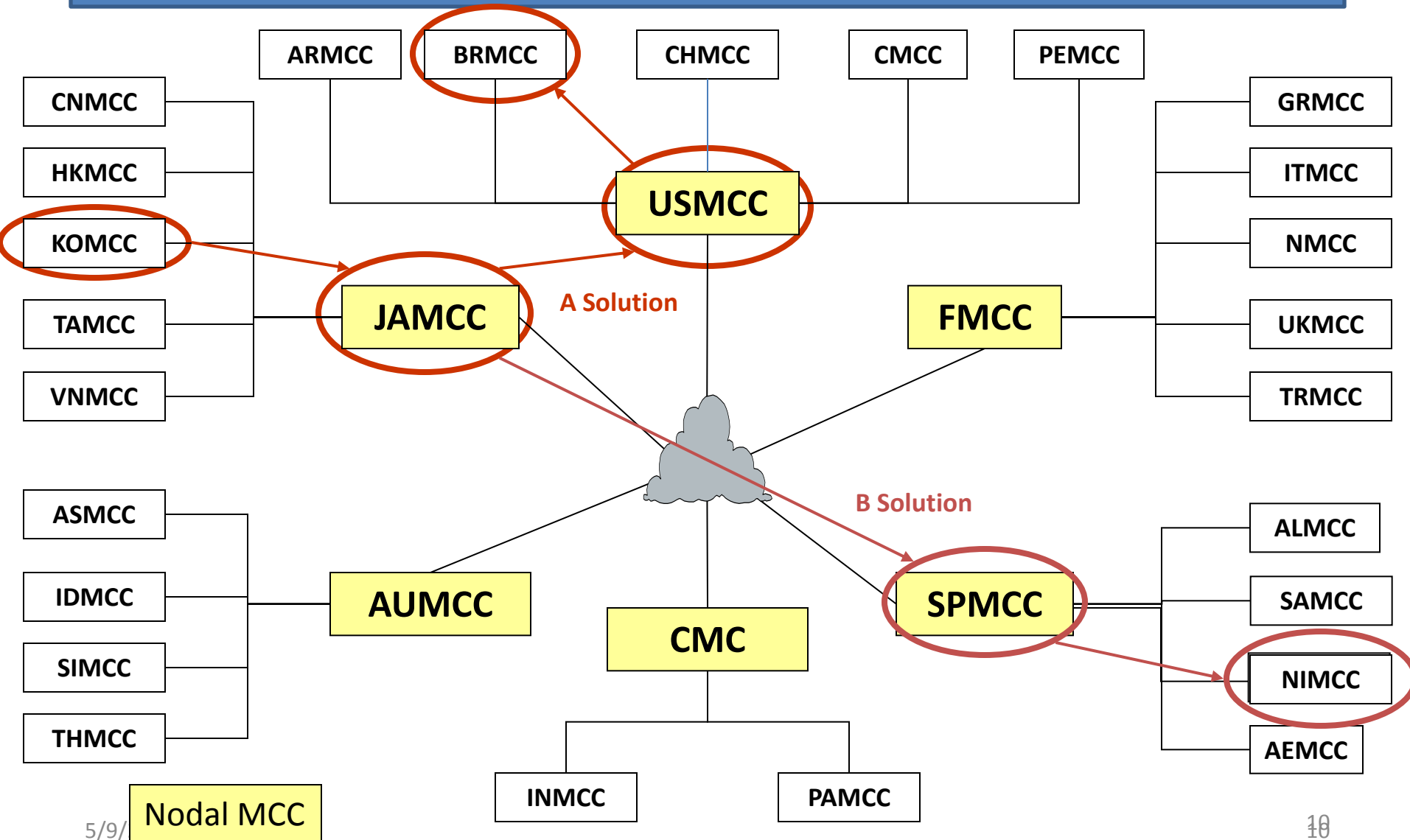
Alert detected by TAMCC with location in BRMCC's & NIMCC's service areas

- TAMCC sends to JAMCC (if TAMCC has not previously sent the "beacon event" to JAMCC).
- JAMCC sends to USMCC & SPMCC (if JAMCC has not previously sent the "beacon event" to USMCC and SPMCC).
- USMCC sends to BRMCC (if USMCC has not previously sent the "beacon event" to BRMCC).
- SPMCC sends to NIMCC (if SPMCC has not previously sent the "beacon event" to NIMCC).
- BRMCC & NIMCC send to respective RCC or SPOC (if BRMCC or NIMCC have not previously sent "beacon event" to RCC or SPOC), based on national procedures.
- Procedure above is followed for the E locations.

MCC to MCC Data Distribution



Alert detected by KOMCC with location in BRMCC's and NIMCC's service areas - Ambiguity is resolved to BRMCC





MCC to MCC Data Distribution

Ambiguity Resolution Example

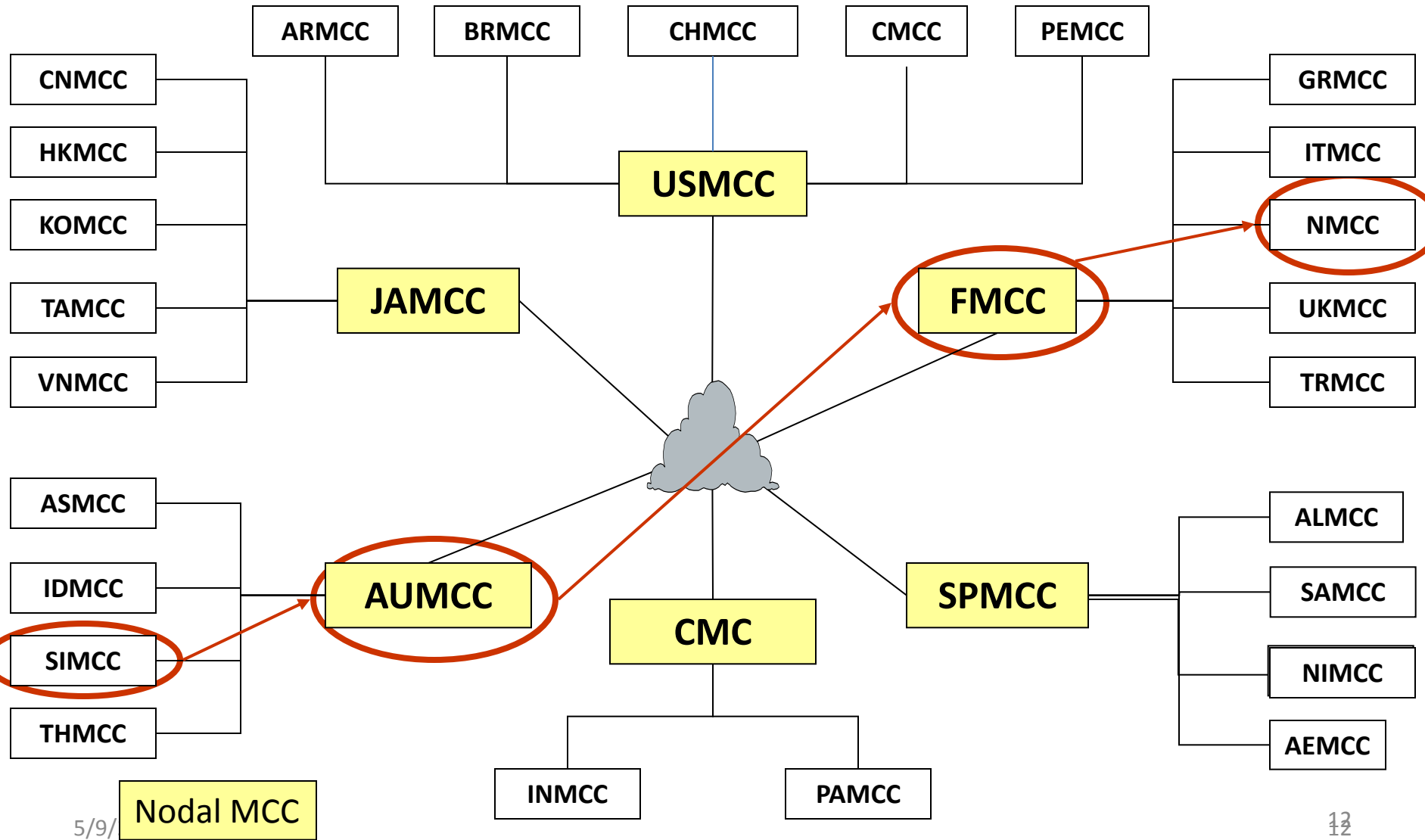
Alert detected by KOMCC with location in BRMCC's and PEMCC's service areas
Ambiguity is resolved to BRMCC (Same Beacon ID as previous example)

- KOMCC sends to JAMCC (if KOMCC has not previously sent the "beacon event" to JAMCC).
- JAMCC sends to USMCC & SPMCC (if JAMCC has not previously sent the "beacon event" to USMCC and SPMCC).
- USMCC sends to BRMCC (if USMCC has not previously sent the "beacon event" to BRMCC).
- SPMCC sends to NIMCC (if SPMCC has not previously sent the "beacon event" to NIMCC).
- BRMCC & NIMCC send to respective RCC or SPOC (if BRMCC or NIMCC have not previously sent the "beacon event" to RCC or SPOC), based on national procedures.
- Procedure above is followed for the E locations.
- **Notes:**
 - No messages are sent to PEMCC
 - No other messages are sent to BRMCC or NIMCC
 - To resolve ambiguity, there must be at least one Doppler event

MCC to MCC Data Distribution



NOCR Distribution - Beacon with Sweden country code is detected by SIMCC with one side of Doppler location in SIMCC's service area (Alert (Event) could have been received from another MCC)





MCC to MCC Data Distribution

Notification of Country of (Beacon) Registration (NOCR) Example

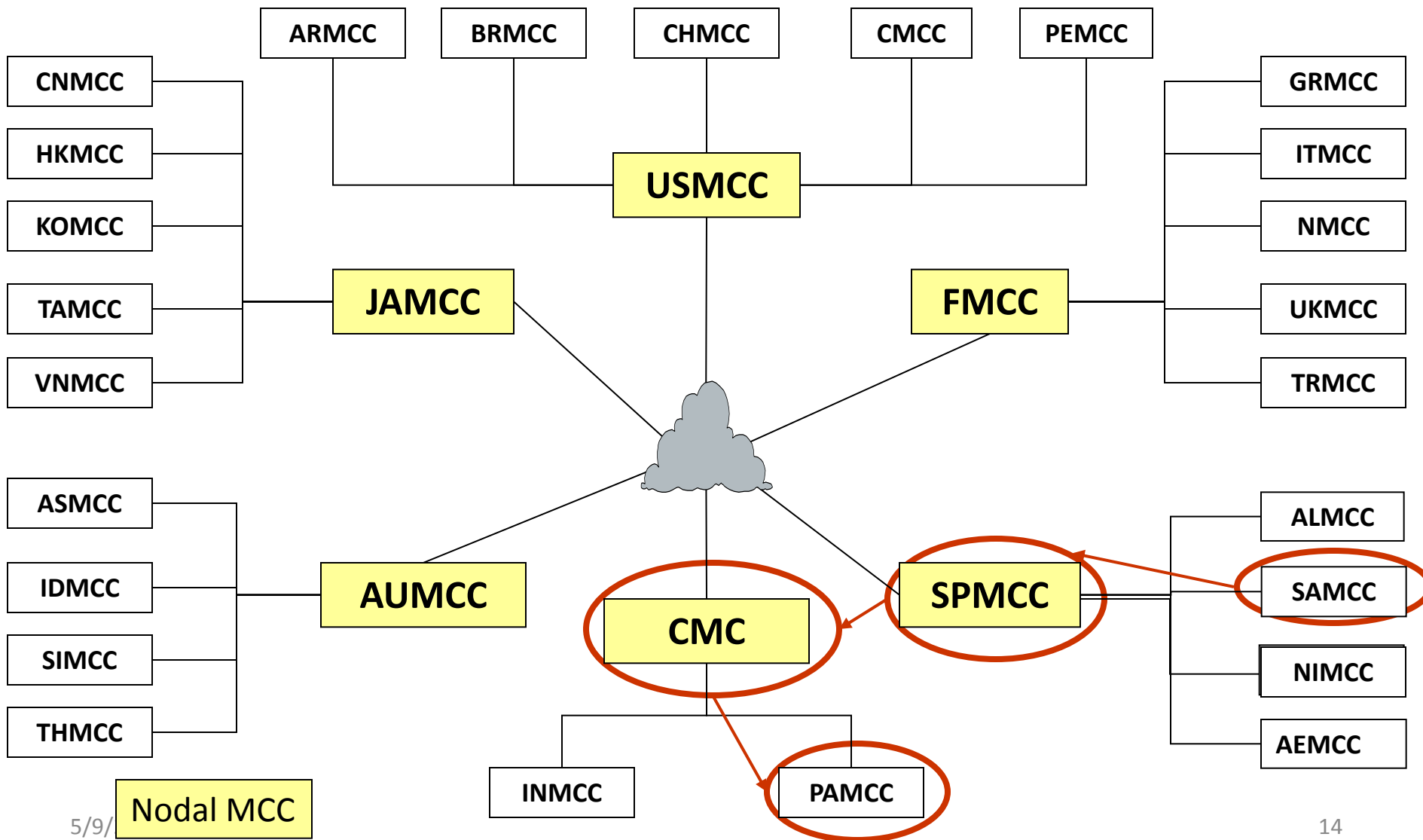
Beacon with Sweden country code is detected by SIMCC with one side of Doppler location in SIMCC's service area (Alert (Event) could have been received from another MCC)

- Location is required.
- SIMCC sends NOCR to AUMCC (if SIMCC has not previously sent the NOCR to AUMCC – The other Doppler location could have been in IDMCC's Service area and it sent the alert to AUMCC first).
- AUMCC sends NOCR to FMCC (if AUMCC has not previously sent the NOCR to FMCC (This is not likely)).
- FMCC sends NOCR to NMCC (if FMCC has not previously sent the NOCR to NMCC(This is not likely)).
- NMCC sends NOCR to Sweden SPOC (if NMCC has not previously sent the NOCR to the Sweden SPOC (This is not likely)) based on national procedures.



MCC to MCC Data Distribution

SAMCC detects a Ship Security beacon with a Pakistan country code, with or without location





MCC to MCC Data Distribution

SSAS Example

SAMCC detects a Ship Security beacon with a Pakistan country code, with or without location

- SAMCC sends the Alert to SPMCC (if SAMCC has not previously sent the Alert to SPMCC).
- SPMCC sends the Alert to CMC (if SPMCC has not previously sent the Alert to CMC).
- CMC sends the Alert to PAMCC (if CMC has not previously sent the Alert to PAMCC).
- PAMCC sends the Alert to “Competent Authority” (if PAMCC has not previously sent the Alert to “Competent Authority”) based on national procedures.
- Distribution of SSAS Alerts is independent of the beacon’s location.



Glossary (1 of 2)

- Ambiguity Resolution – Real solution determination
- Beacon Event – Unique Beacon ID/Satellite/TCA
- Encoded location – Location encoded in beacon ID (30 Hex) – usually from internal GPS for EPIRBs and PLBs, but may be from aircraft navigation system for ELTs
- Service Area – SRRs of an MCC and the SPOCs it supports
- NOCR – Notification of Country of (beacon) Registration



Glossary (2 of 2)

- Position conflict - distance separation of at least 50 km from a new Doppler or encoded position vs. a reference position, where the reference position is:
 - other Doppler or encoded position (prior to ambiguity resolution) or
 - the resolved position (after ambiguity resolution)
- SSAS – Ship Security Alerting System
- TCA – Time of closest approach of satellite to beacon
- SRR – Search and Rescue Region



Questions?