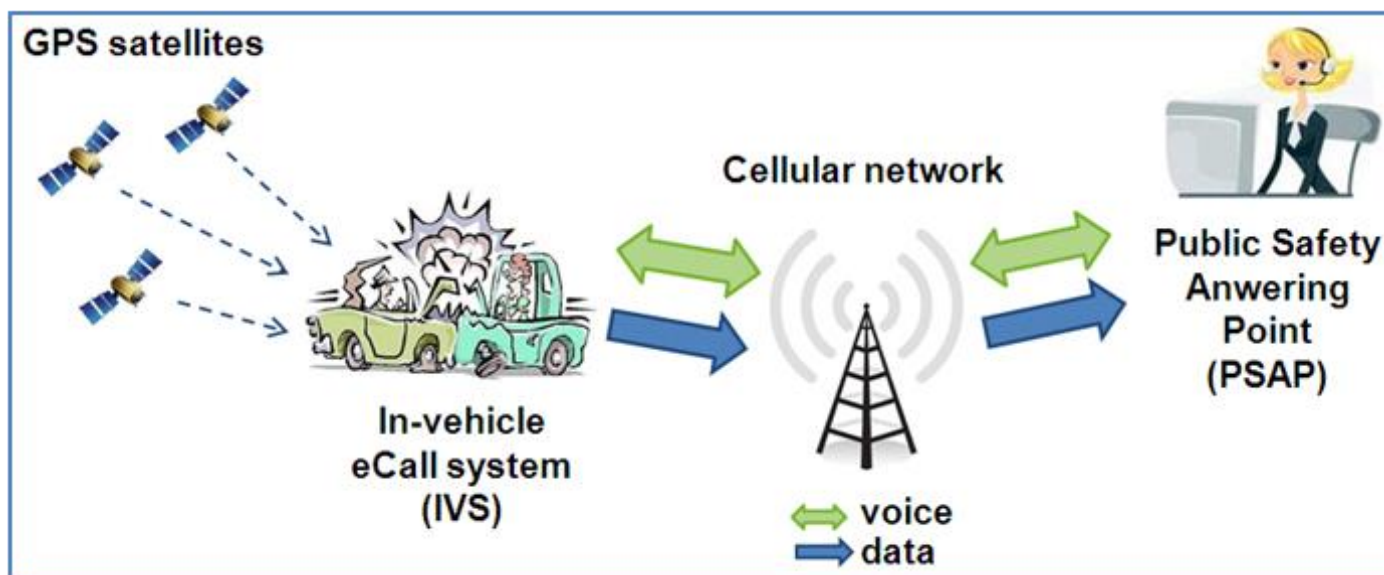


eCall – Some assumptions on numbering and deployment

Freddie McBride, European Communications Office

eCall – brief introduction

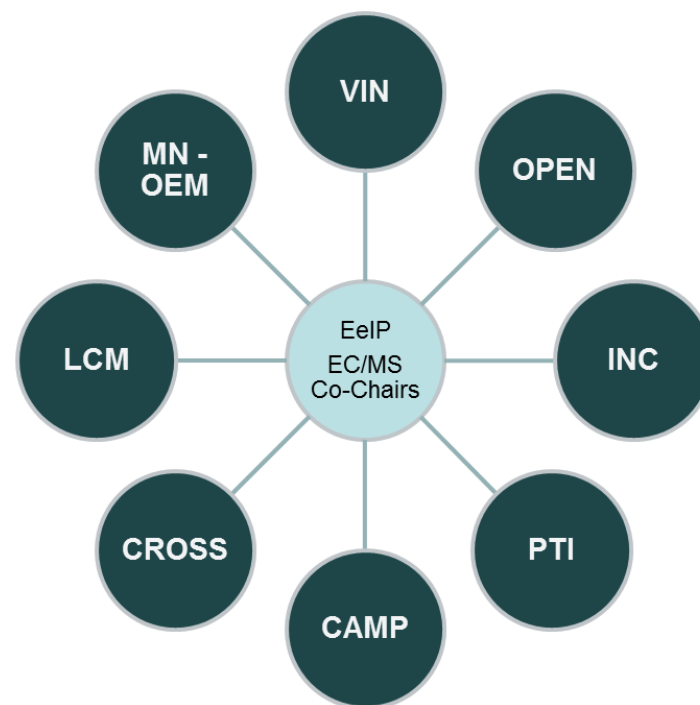
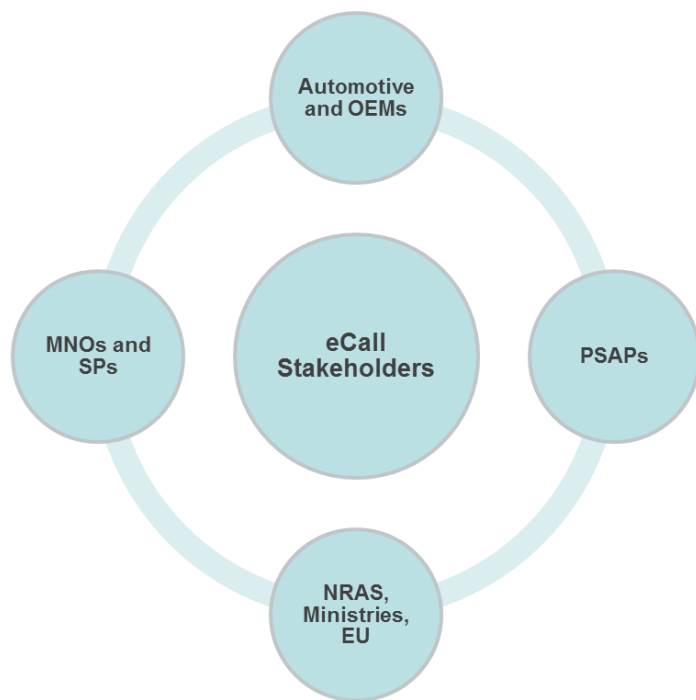
- eCall is a European initiative intended to bring rapid assistance to motorists involved in a collision anywhere in the European Union



Source: Wireless Design & Development

- 112 call. Requirements for the provision of caller location information apply

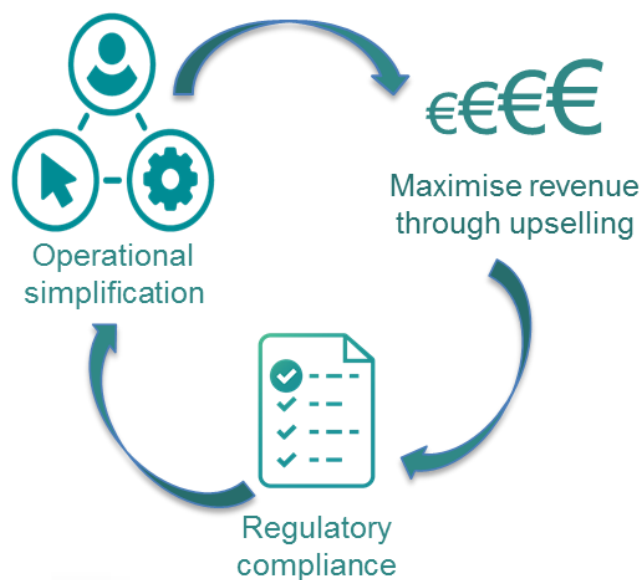
eCall Stakeholders



European eCall Implementation Platform
– Task Forces

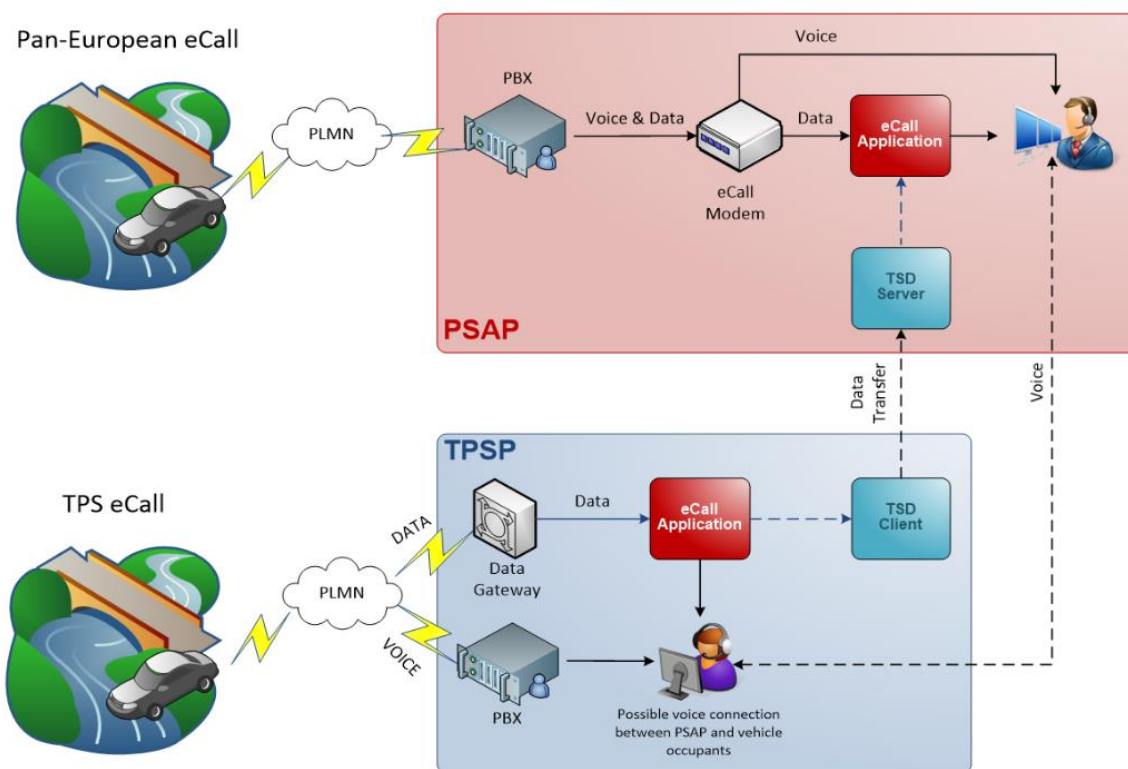
eCall Deployment - Minimise costs. Maximise Opportunity

- eCall-type services have been around for many years
- The industry has deployed eCall-like services as part of a bundle of services to customers



- Mandatory pan-European eCall a citizen protection policy initiative

eCall only V. TPS eCall + VAS



There is no business opportunity in eCall alone.

112 eCall and TPS eCall services *“can coexist provided that the measures necessary to ensure continuity in the provision of the service to the consumer are adopted.”*

“all vehicles should be equipped with the public 112-based eCall service, regardless of whether or not a vehicle owner opts for a TPS eCall service.”

- REGULATION (EU) 2015/758

Source: EENA

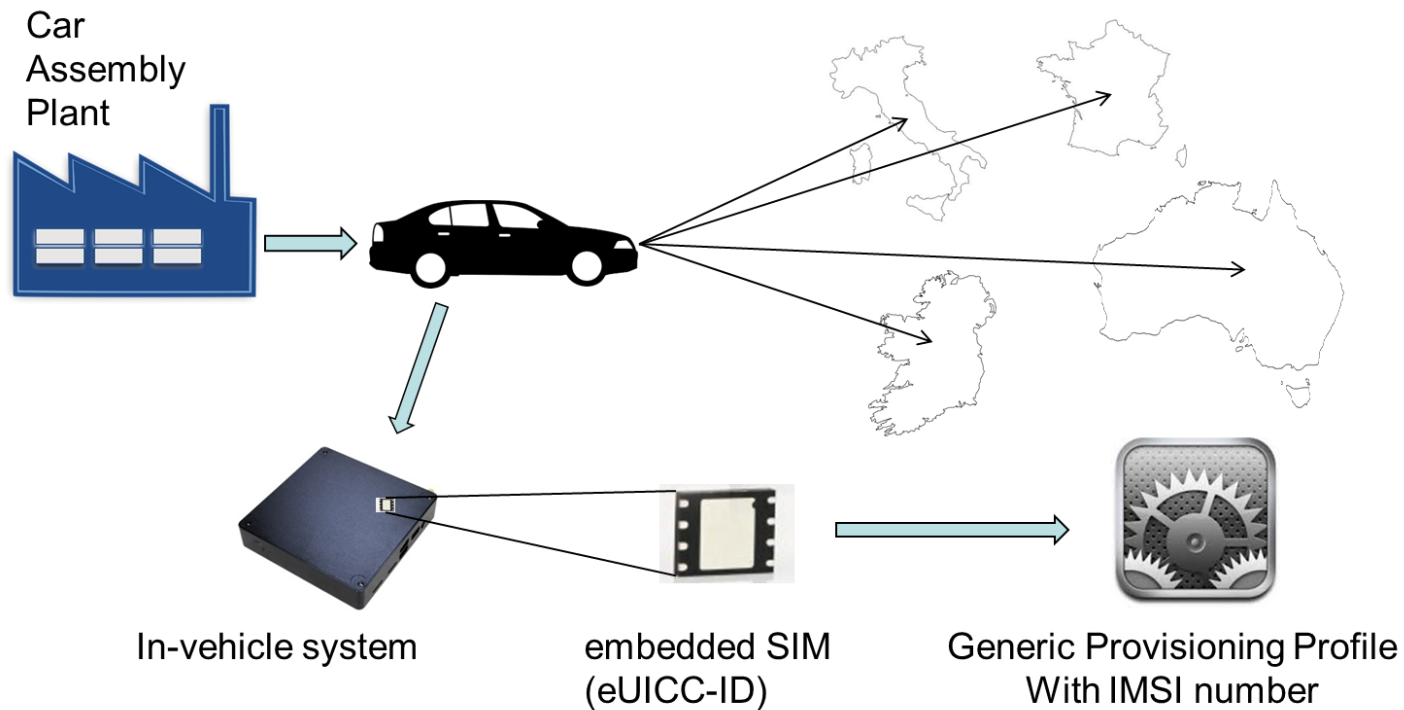
Assumption #1: The industry will deploy a single device capable of delivering “eCall only” or “eCall + VAS” depending on the vehicle owner’s preference.

eCall Profile Characteristics

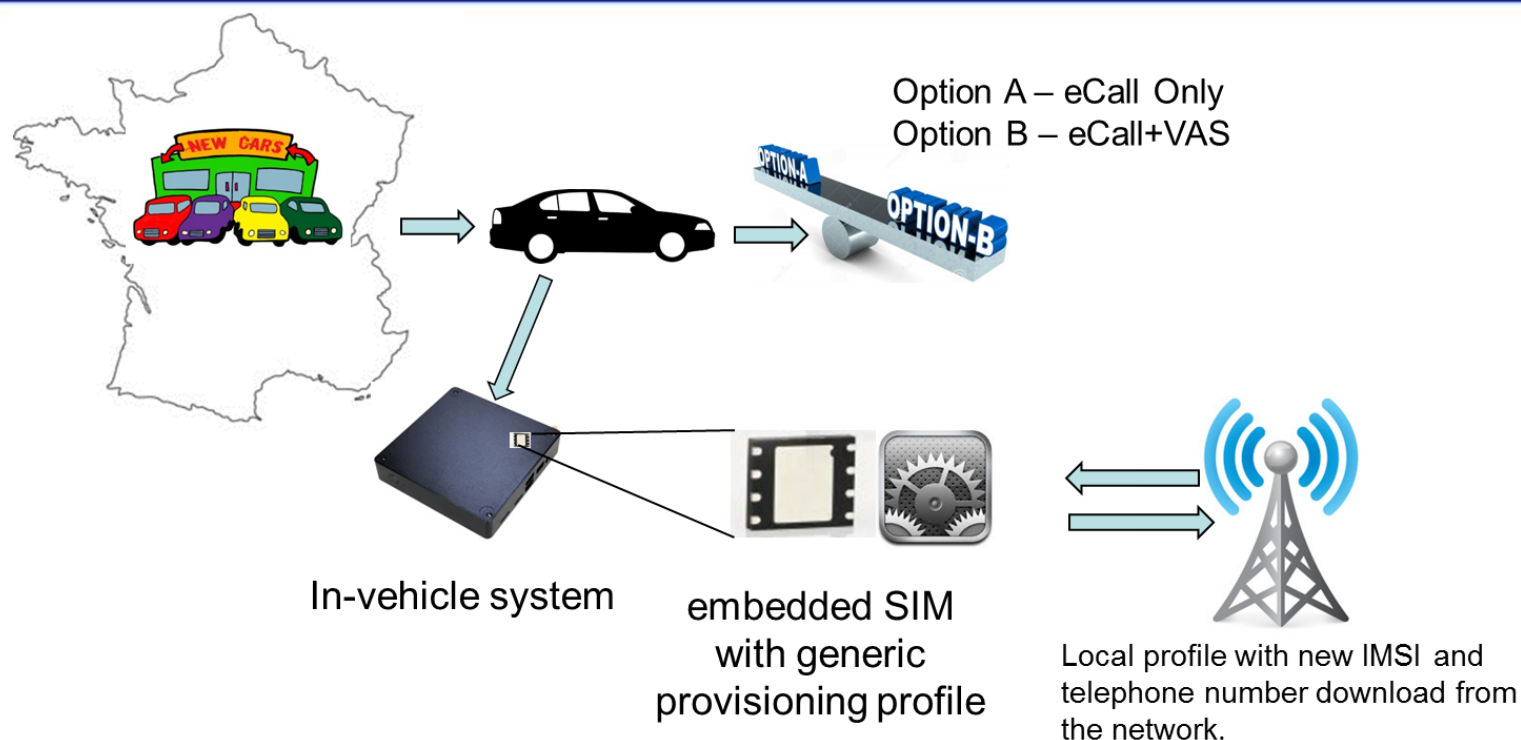
- eCall-only profile
 - Dormant – no mobility management
 - Privacy by design
 - No subscription
- eCall+VAS profile
 - Always connected
 - Subscription-based service
 - Privacy right waived in subscription agreement

Only one profile can be active at any given time!!

What deployment might look like



What deployment will look like – cont'd



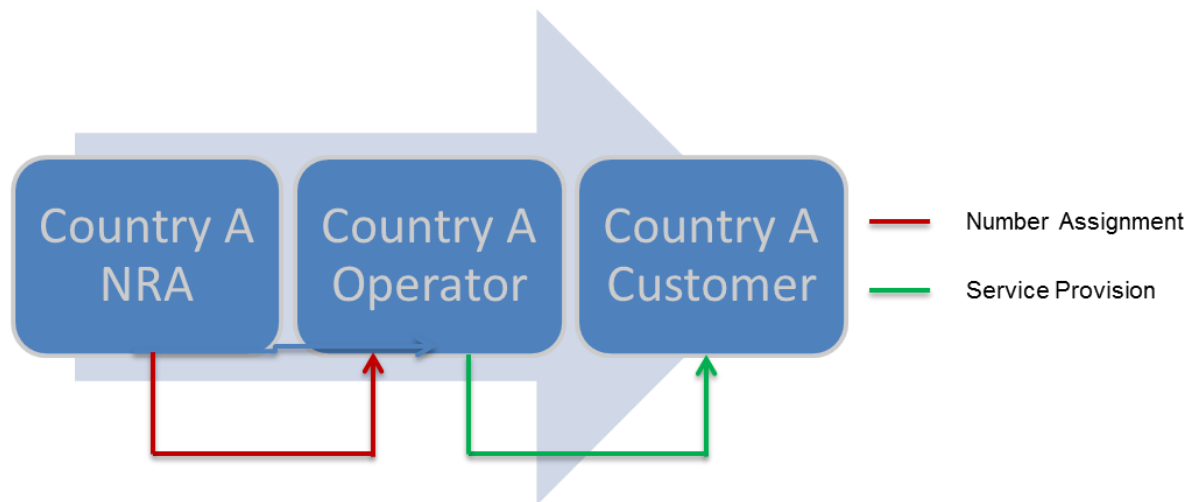
Assumption #2: over-the-air provisioning technology allows for greater flexibility in the deployment of different eCall profiles (and provides a solution to operator lock-in) and is likely to be widely adopted for the deployment of eCall.

eCall numbering requirements

- Why do we need numbers in the first place?
 - eCall is essentially a mobile service
 - eCall needs wide geographic coverage and the ability to roam between networks
 - Emergency calls from “simless” devices not supported in a lot of European Countries
- For network authentication and registration (including roaming) each eCall in-vehicle system needs an International Mobile Subscriber Identity Number (IMSI)
- Each eCall in-vehicle system needs an telephone number (or MS-ISDN or E.164 number) to be able to make a call and present a valid CLI.
- A valid CLI is needed to facilitate callback

Assigning Numbers for Services

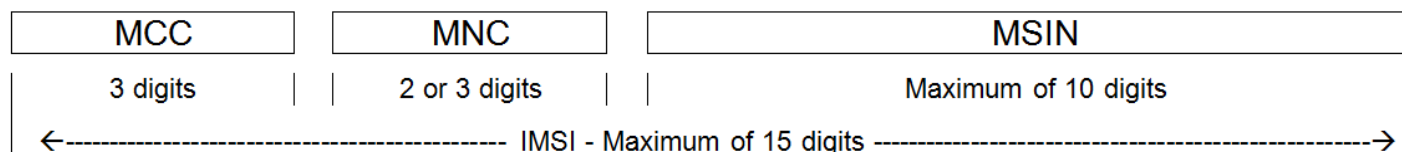
- National numbering plans originally designed for the provision of services in the national market. A lot of transparency in the process.



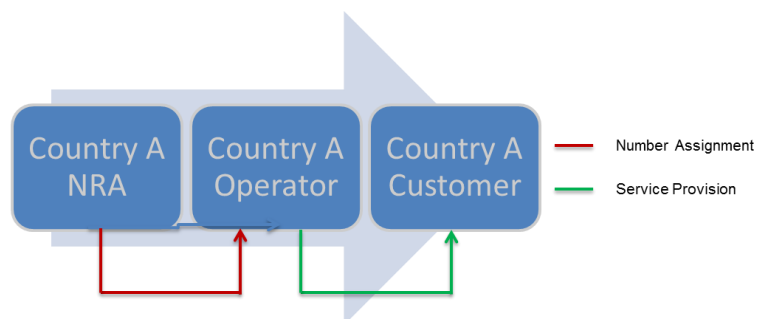
- M2M market is inherently global

E.212 Mobile Network Codes and IMSIs for eCall

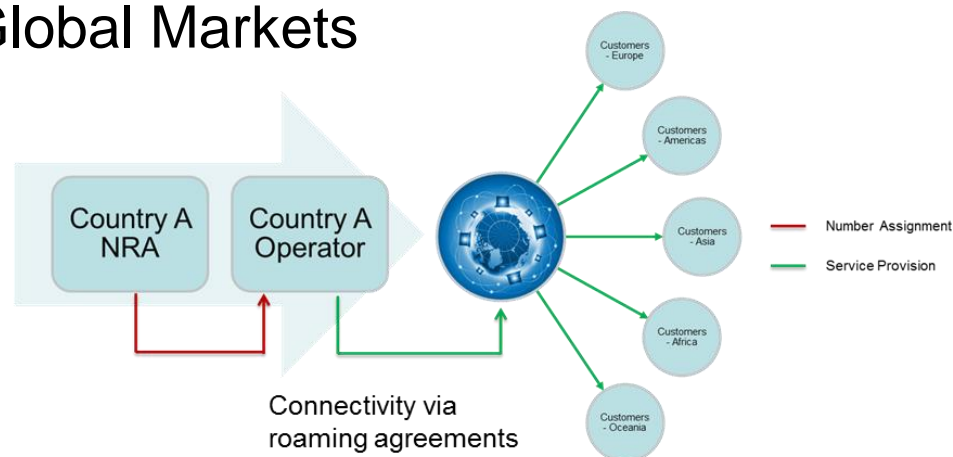
ITU-T Recommendation E.212. defines the international identification plan for public networks and subscriptions



National Markets



Global Markets



Assumption #3: eCall will not generate an increase in demand for MNCs. eCall requires global connectivity. Existing roaming agreements between mobile networks will be exploited to provide this global connectivity.

Telephone (E.164) Numbers for eCall

- How many numbers required?
 - 270 million vehicles – approx 5% stock renewal each year (13.5 million)
 - New passenger car registrations in Europe (source: ACEA)

Year	2012	2013	2014	2015	2016	5 yr average
New registrations (000,000)	12	11,9	12,5	13,7	14.6	12,9

- Demand for approximately 13,000,000 new mobile telephone numbers per annum when critical mass of new type vehicles reached (so not anytime soon!)

- Numbering Options

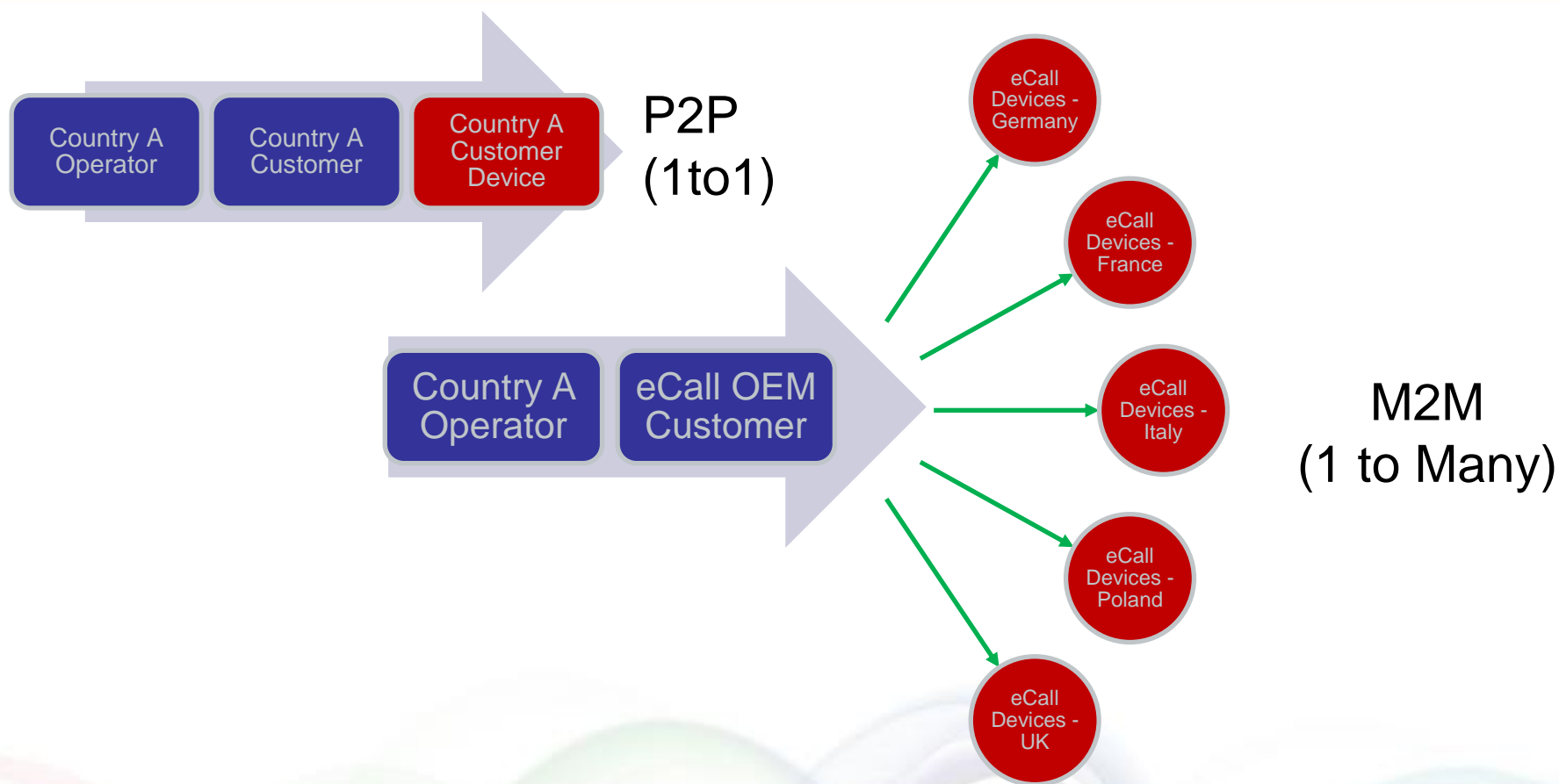
- National numbers (assigned by National authorities)
 - Dedicated M2M numbers
 - Mobile numbers

- International numbering resources (Assigned by ITU-T)

- +882, +883, +878 number ranges

Assumption #4:
 Fragmented approach
 (mix of national and
 international numbers)
 likely in the early days of
 eCall

How P2P and M2M/eCall devices are numbered



Assumption #5: An increase in the Extra-territorial use of E.164 numbers inevitable

Other issues

- **Risk of numbering exhaustion - low**
 - Biggest risk is that the burden of addressing eCall devices falls disproportionately on larger European countries. This is likely in the short term but the volume will not be big.
 - Local profile download reduces this risk as national numbers can be remotely provisioned
 - National authorities should be engaged with MNOs and automotive industry to the lessen the risk of exhaustion in the mid to long term
 - Transparency regarding the extra-territorial use of IMSIs and E.164 numbers is needed
- **Number recycling**
 - Numbers recycled after a period of quarantine (typically 1 year)
 - No significant recycling opportunity for at least 15 years (except for accident write-offs)
 - Recycling an important factor for consideration in eCall end of life discussions
- **Number Portability (NP)**
 - Relevance of NP for eCall (or M2M in general) not obvious – E.164 number is used for addressing device rather than personal subscription – i.e. it is a hidden number for a closed service

Thank you for your attention!



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