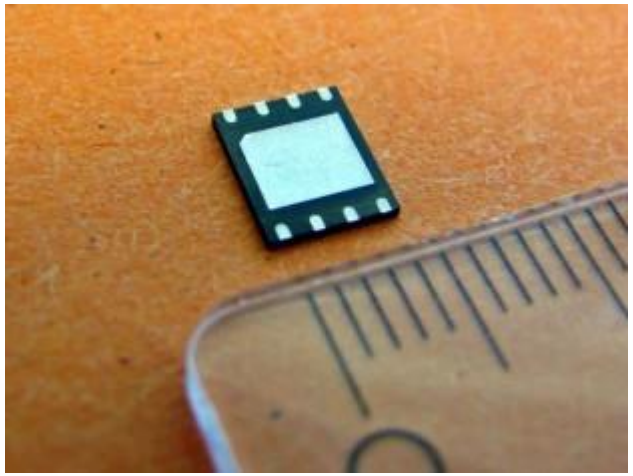
Embedded SIM



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eSIM Media Buzz

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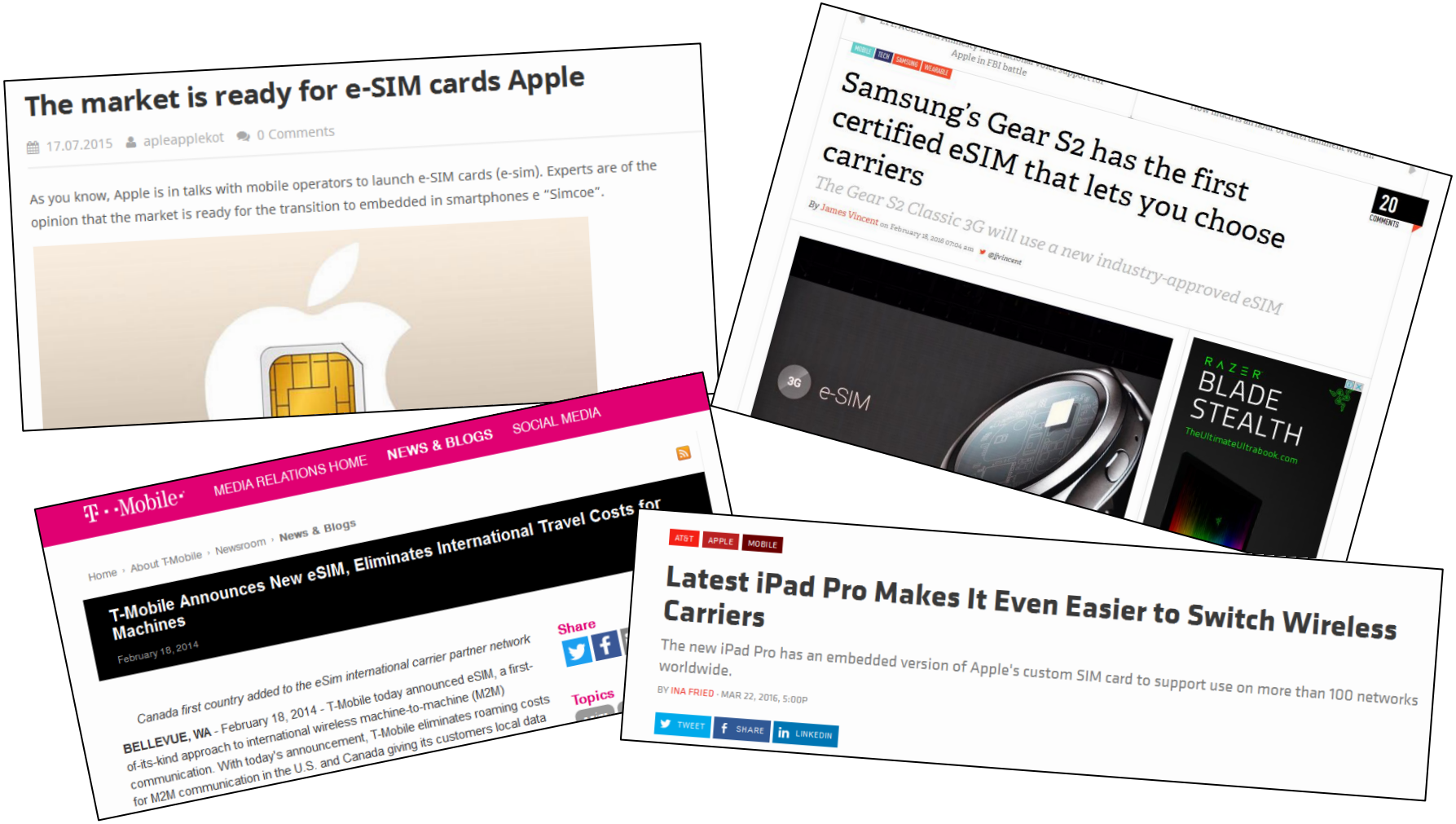
Press clipping for telecom specific, general technology and mass media are all rising the attention towards eSIM , but what is really and what not?



Embedded SIM

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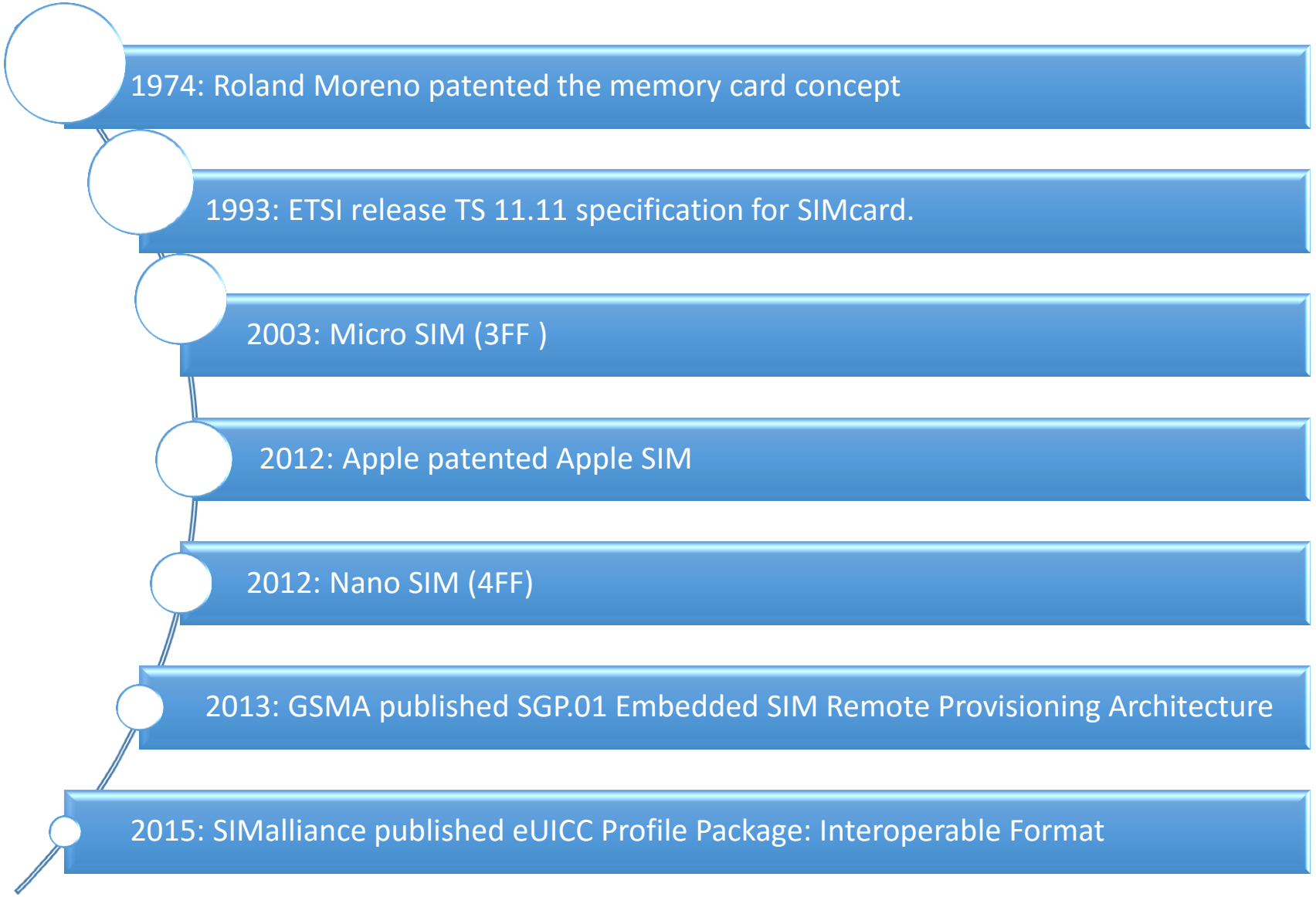
SIM History



SIM History

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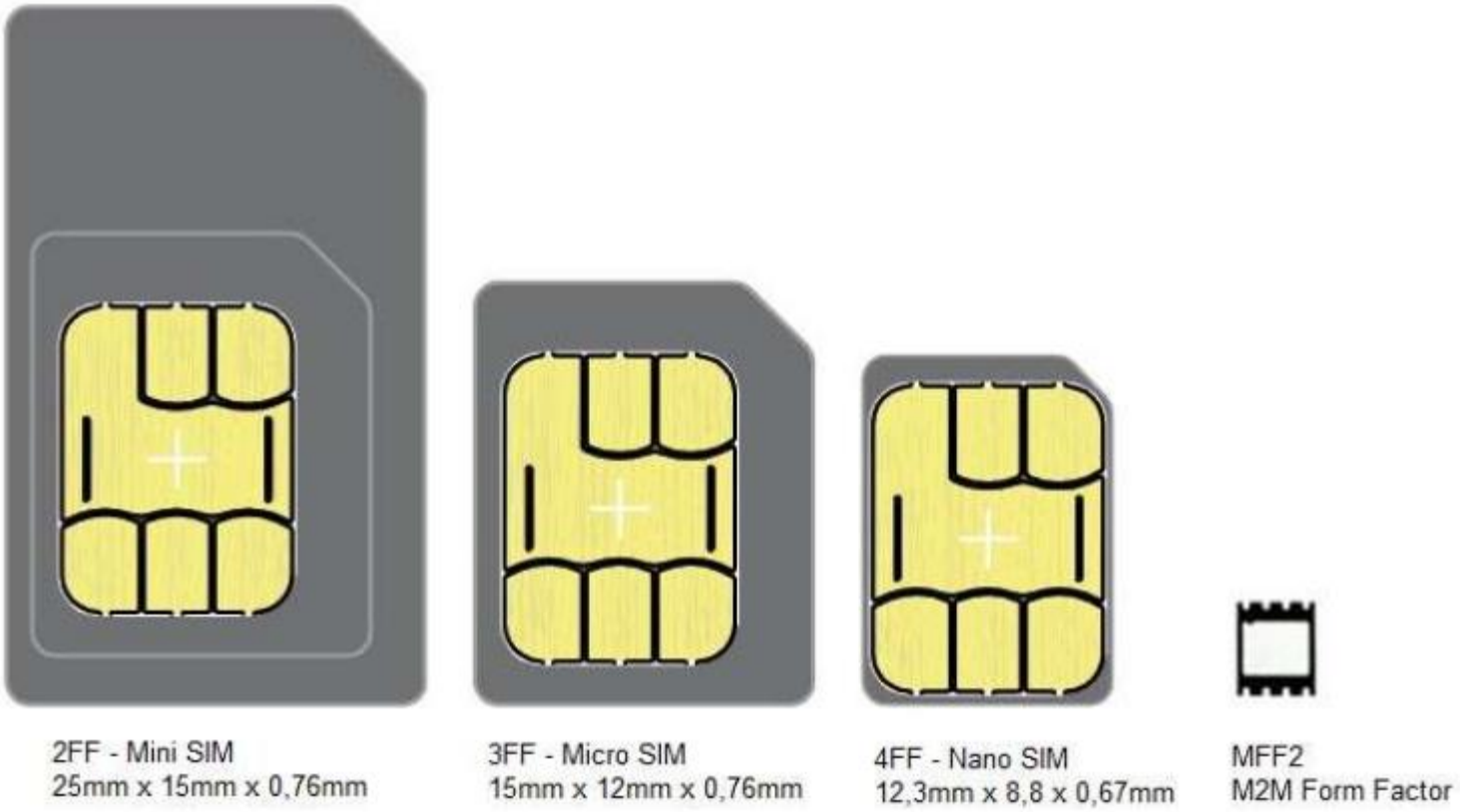
Form factors evolution



eSIM SGP.01-02

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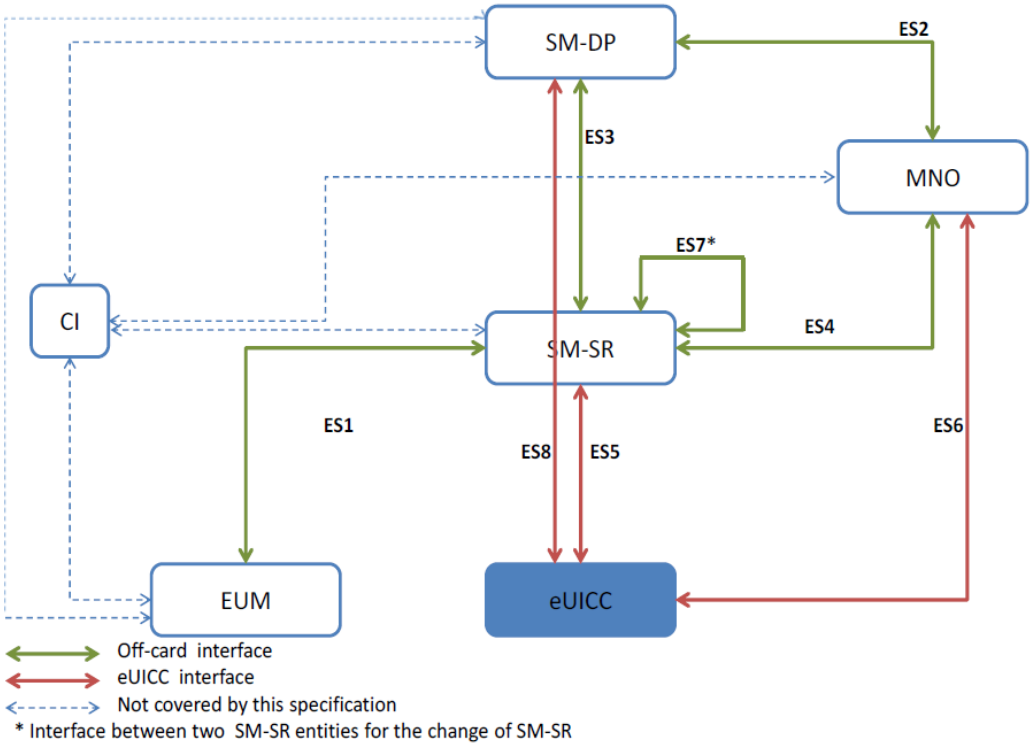
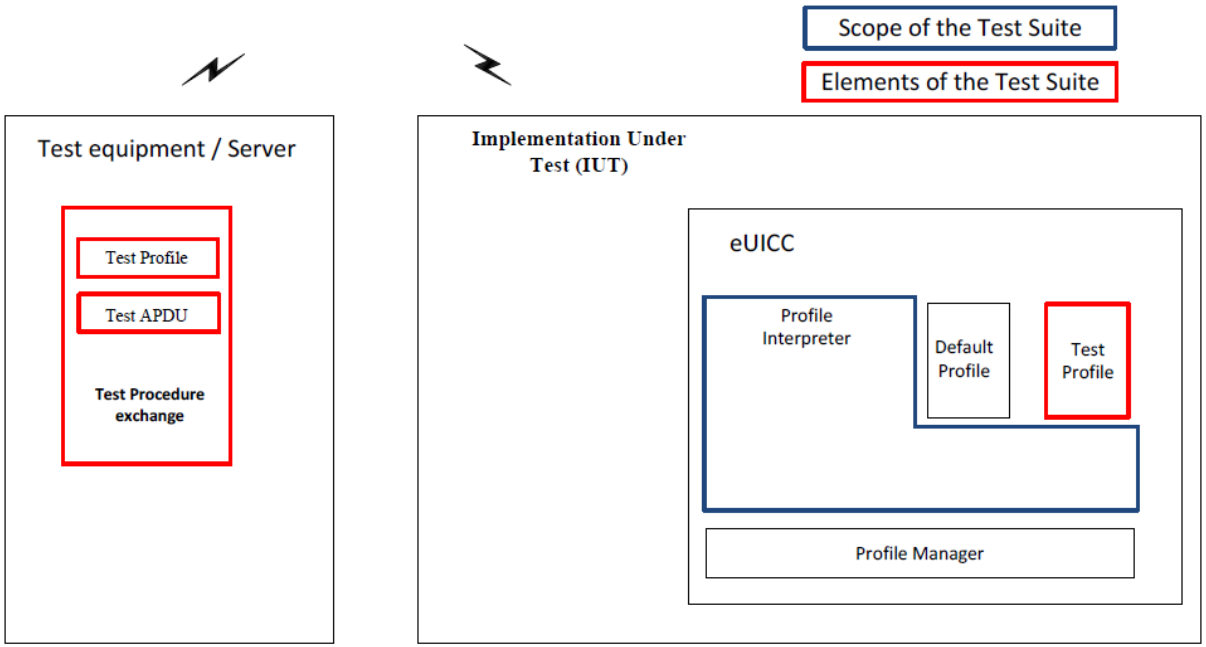
The GSMA had managed a project to fast track the development of specifications to support the development and deployment of the Embedded UICC. The GSMA published the SGP.02 Remote Provisioning Architecture for Embedded UICC Technical Specification v1.0 and the SGP.01 Embedded SIM Remote Provisioning Architecture v1.1 in December 2013.



GSMA

eSIM format files

SIMalliance had managed This document defines the technical specification of a standard format to be used for the loading and installation of an interoperable Profile Package in any compliant eUICC. This specification is based on the following SIMalliance document: eUICC Profile Package: Interoperability Functional Requirements.



eSIM possible path

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	Removable non-reprogrammable	Removable and reprogrammable	Sealed and reprogrammable but with a second slot for standard SIM	Sealed and reprogrammable
				
Form factor	Standard	Standard	Standard + Embedded	Embedded
Reprogra-mmable	✗	✓	✓	✓
SIM slot required ?	✓	✓	✓	✗

Apple SIM / eSIM

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B2C — Apple SIM

- Launched **October 2014**, for iPads (i.e. no iPhone version)
- Available with **local carrier plans in UK and US**
- **Apple SIM** (trad. nano SIM) is welded into the device (i.e. **non removable**)
- Upon first cellular data activation **users can choose packages** from different local operators
- **Data plans** for traveling in **90 countries**

Apple SIM partners[2]

at&t au EE Sprint T-Mobile AOL GigSky

B2B — GMA M2M

- Launched in **March 2015** for B2B connectivity deployment
- Leverages **Gemalto eUICC solution** (i.e. hardware + subscription management platform)
- **Enterprise customer negotiates contract with a single MNO**
- eUICCs are delivered with bootstrap profile[1] to enterprise for deployment in device
- Once device is sold in final country, eUICC is localized over the air to the respective operator (triggered by MNO

GLOBAL M2M ASSOCIATION

T-Mobile orange TIM swisscom Bell TeliaSonera SoftBank

SIM/eSIM/vSIM

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Traditional SIMs

- Commercial launch in 1991 (G&D)
- 1st deployment Radiolinja (Finland)
- Physical hardware (UICC[2]) + hardcoded logical profile
- Predominantly single operator profile per SIM, multi IMSI possible[3])
- Performs authentication and encryption for network connection

Embedded SIMs

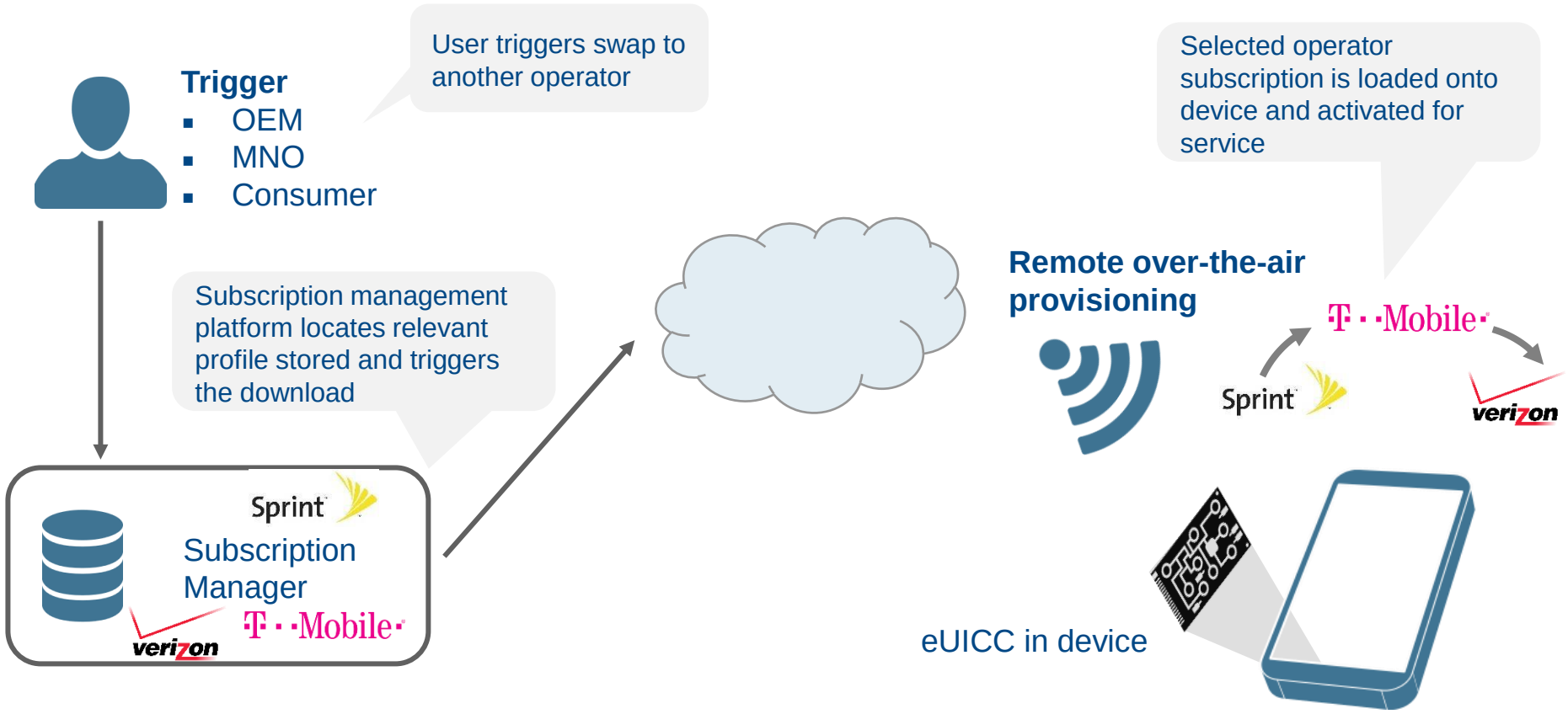
- Initial specification by GSMA in 2013
- 1st commercial deployment in M2M by AT&T in consumer deployment by Apple
- Physical hardware (eUICC[4]) + virtual logical profile
- Operator profile provisioned remotely
- Theoretical deployment[5]: Hardware permanently integrated into device
- Actual deployment: Leveraging classical SIM cards that are detachable with eSIM software
- No international standard has been established

Soft SIMs

- No physical hardware
- SIM functionality only as softwa layer
- Operator profile provisioned remotely
- Security concerns (e.g. encrypti certification) persisting for indus deployment

The terms eSIM and soft SIM are often used interchangeably – however a key differentiation exists i that embedded SIMs combine the traditional physical hardware with a virtual logical profile

eSIM setup process



Source: Arthur D. Little analysis, GSMA eUICC specification v3

eSIM Market

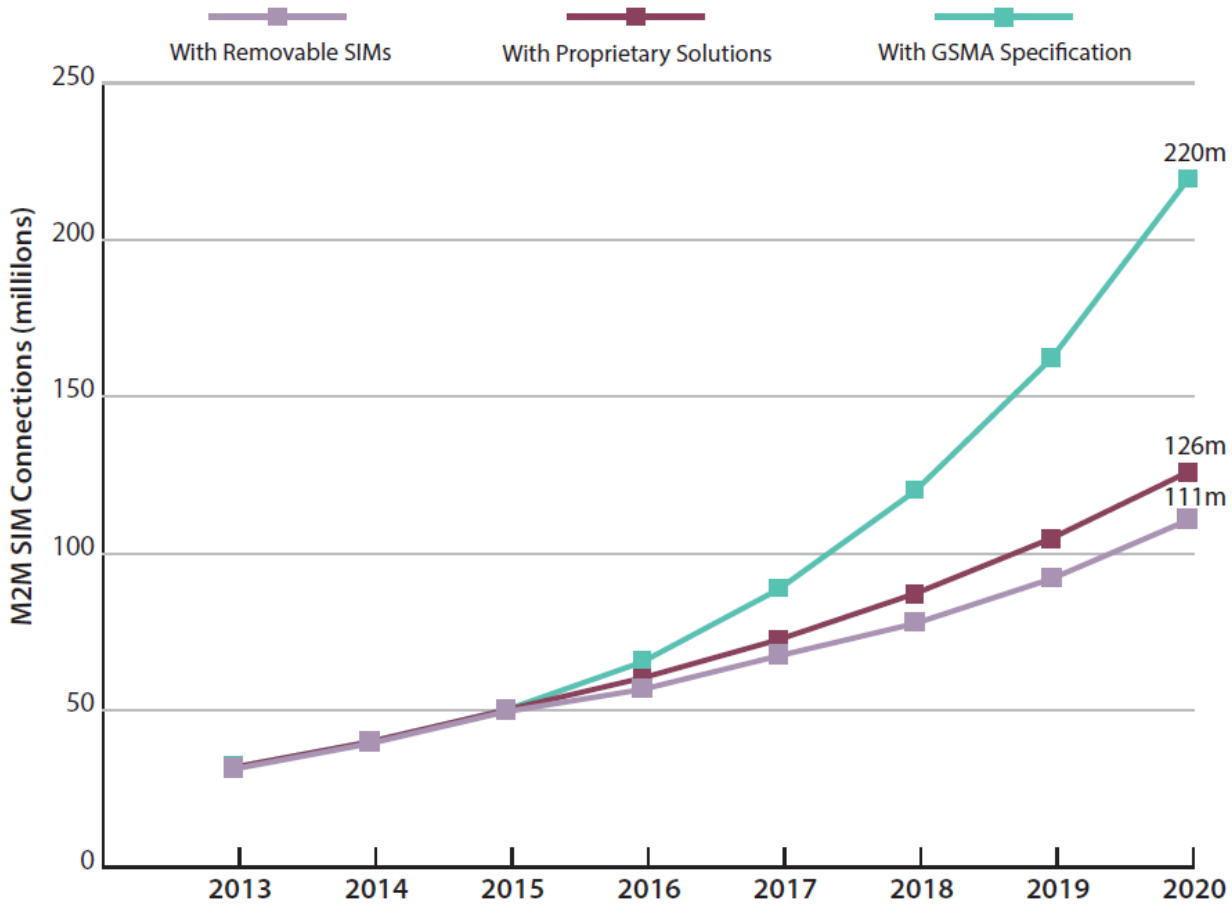


Figure 1.3: Projected Consumer Electronics Connections worldwide with alternative scenarios

eSIM Market

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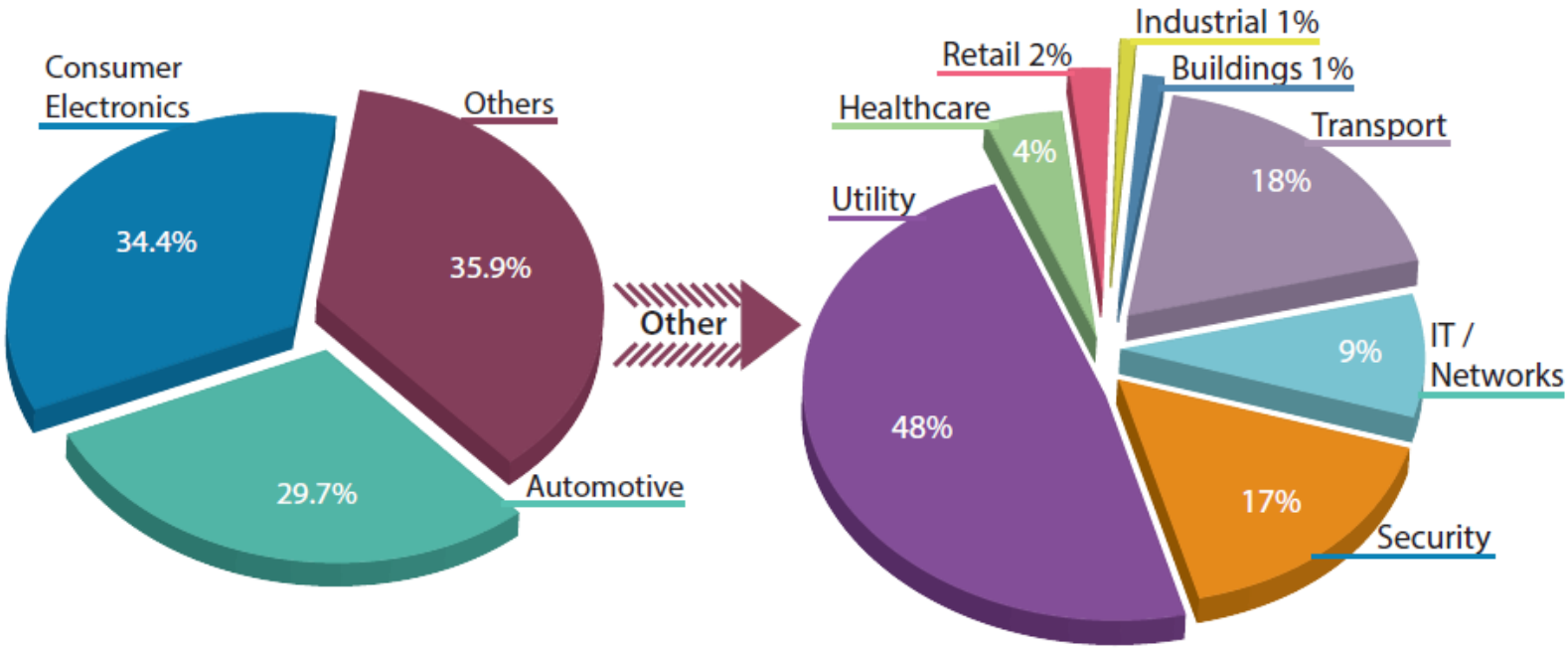

Figure 1.4: Breakdown of M2M Connections per Sector in 2020 in the Case of GSMA Embedded SIM Specification

eSIM Market

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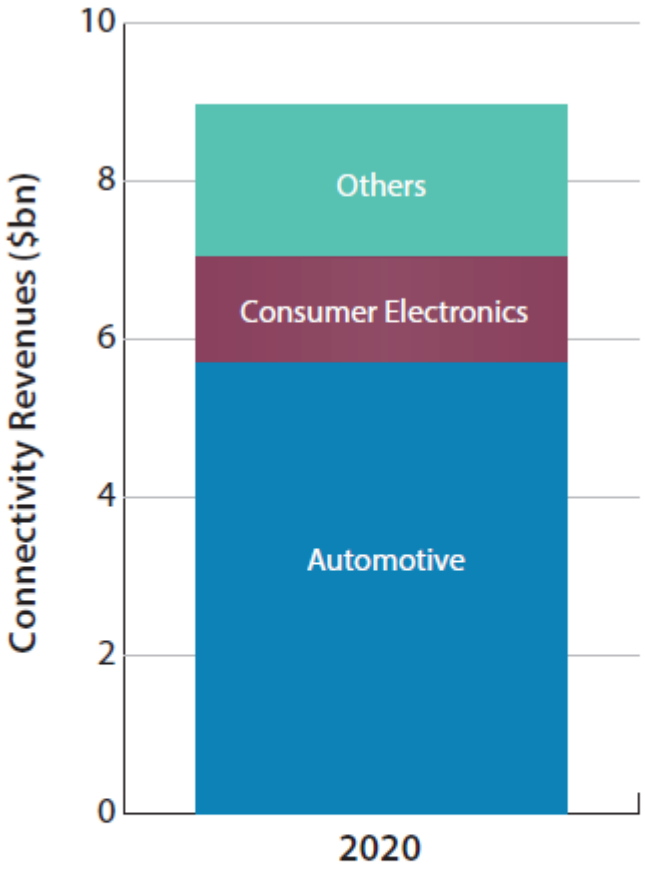

Connectivity Revenues	($bn)
Automotive	5.70
Consumer Electronics	1.33
Others	1.93
Total	8.96

THANK YOU!

Jose-Luis Horna

https://download.converlogic.com/eSIM.pdf

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