



# BTG Project E-SIM

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# Branche organization BTG



**200 members**, large corporates, mid size users

**Intermediary** and look after interests on behalf of business users in the interest field of government, market and technological development;

Focus on **communication technology** where telecommunications is part of.



# BTG has 200 members in different branches



delta lloyd



GIARTE



Erasmus MC



# Background e-sim project



In 2014 new government regulations (shared MNC), first questions from members and research TNO;

In 2015 BTG started a project with a number of members and partners **to address identified restrictions** in current telecoms offerings.

What kind of **role** for BTG? (intermediary, facilitator, direction/coördination, sourcing..)

Costs?



# Functional requirements

**Capacity, speed, availability, safety, accessibility** (Any place, Anytime, Anywhere)

**Full integration** of fixed and mobile infrastructures (indoor/outdoor)

**Secure mobile** infrastructure for **business users**

**Less dependence** on mobile operators (national & international) and device manufactures

**More equality** between business user- and consumer market

**Connectivity** with regional networks (LoRa)



# Objectives



Formulated objectives for the project were:

Remove **SIM-swap** requirements when switching provider:

Logistic nightmare to exchange SIMs for all staff;

Impossible to swap **SIMs in M2M/IoT devices**;

Introduction of true **embedded-SIM** devices (e.g. Gear).

**Improve indoor coverage**, introduce provider-independent indoor solutions (i.e. private);

**Improved security and availability** for telecom services.

**Add values**; Localization (LBS), authentication, mobile payment, authorisation, reducing transmission power, less battery consumption(IoT), dynamic allocation voice and data bundles



# Investigated solutions

During the project a number of options have been investigated:

## 1. MVNO-type solutions

Rejected: too much telecom responsibility

## 2. Shared MNC

Rejected: too complex legal & operational processes

## 3. E-SIM

2 Options; 1. real embedded (specifications GSMA 2016; open standard for deployment, certified, real time and safe route for change/management by ECC ) (future standard for M2M), 2. SIM-card (used for PoC)

Accepted: showed **sufficient promise for further investigation**



# Recommended scenario's



SCENARIO	IMSI Wissel	Security e-sim	Security AET	Dekking	Acceptatie MNO	Risico Roaming Kosten User	Kosten Oplossing	I-phone
1	+	+	++	-	7	8	7	+
2	+	+	++	-	8	5	4	++
3	+	+	++	++	6	10	8	+
4	+	+	++	+	4	5	9	+
5	--	-	-	+	8	9	10	-
OPTIE Indoor	+	+	++	++	7	--	9	+





# Participants research



Aspider

Oberthur

SURFNet

Schiphol Airport

sTN (Middle & small business users; availability, standard services)



# E-SIM benefits

**Easy, remote switching** of provider without SIM-swap;

**Global connectivity;**

**Ownership of SIM card and keys;**

**Access to privately owned applet-layer;**

**More and more true embedded devices available** in coming years.



# E-SIM considerations



Ownership of SIM cards introduces **new operational processes and obligations**;

**Partner required** to manage profile-switching, key-management and bootstrap-profile (e.g. MVNE);

Use of **secure Subscription Management tools required**;

**Low respond** to market push, low interest by established **MNOs** (respond on market push)



# E-SIM Proof of concept



In 2016 BTG started a proof-of-concept to:

**Investigate technical feasibility** of remote profile switching, primary focus on voice, sms and data;

**Impact on operational procedures** and processes (functional and technical operation, operating model, launching costumers);

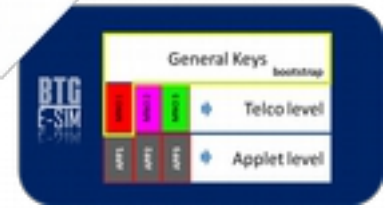
**Usability of applet-layer** for privately developed applications;

**Compatibility with private indoor solutions**, improved availability and security;

Legal and commercial **restrictions** and implications.

Results are expected in **Q3-2016**

Issue; security policies Android (possible), IOS/Apple; NFC-API; blocked





Branchevereniging

**Telecommunicatie Grootgebruikers**

[www.btg.org](http://www.btg.org)