Mobility in biometrics is key – but does it work?

Ondrej Adamek,

eu-LISA conference, Biometric Solutions and Business Processes for Passenger Processing at Land/ Sea BCPs,

June 16, 2022

Mobile biometrics using fingerprints: What does it mean?

Visitor management

Voter verification

Retail

Access to education

Login

Banking

Mobility in biometrics for border control is key – but does it work?

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JENETRIC at a glance

Jena

Founded in 2014

Specialized in biometrics since 1997
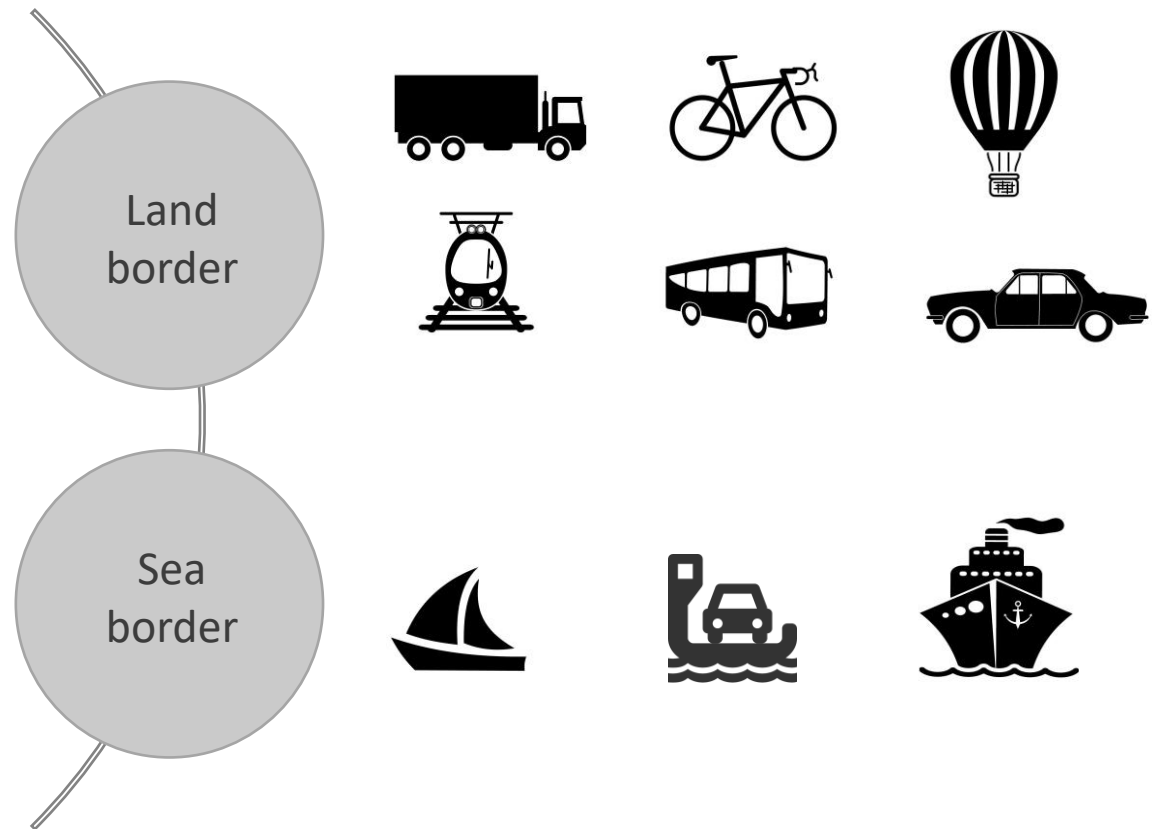
Pioneers in TFT fingerprint scanners

Production in Germany

ISO 9001 and ISO 14001 certified

Mobility in biometrics for border control is key – but does it work?

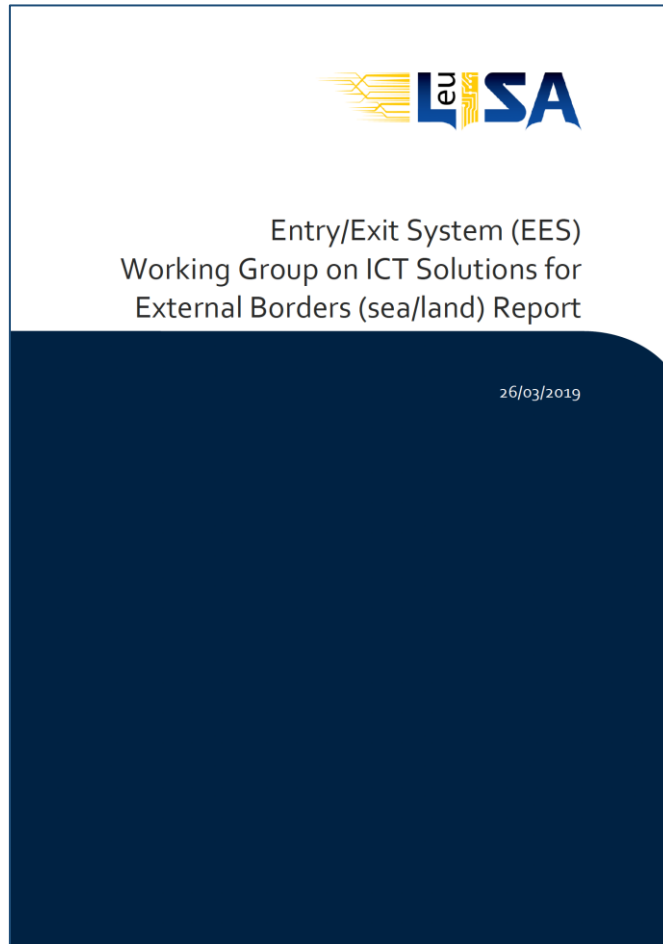# Mobile biometrics for EU external borders

Land border

Sea border

Challenges at land/sea borders compared to air borders

	Land border	Sea border
More difficult environment than on airports	x	x
Arrivals in batches and large groups		x
No pre-warning of travelers (API like)	x	(x)
Multi-passengers vehicle complicated controls	x	x (ferries)
Diversity of individuals (nationals, workers, tourists, truck drivers)	x	x (ferries)
Various crossing modes (pedestrians, cars, vans, buses, trains)	x	x (ferries)

© European Commission

Guidelines for mobile equipment for land and sea borders

Entry/Exit System (EES)
Working Group on ICT Solutions for
External Borders (sea/land) Report

26/03/2019

The objective of the Working group is to facilitate a viable solution and a common architecture for the implementation of the EES at EU external sea and land borders.

https://www.eulisa.europa.eu/Publications/Reports/WG%20on%20ICT%20Solutions%20for%20External%20Borders%20-%20Report.pdf

Mobile biometrics kits - 10 years ago

- Big, heavy, bulky

- Stationary connected to PC/ Laptops

- External power supplies necessary

- Low mobile data bandwidth

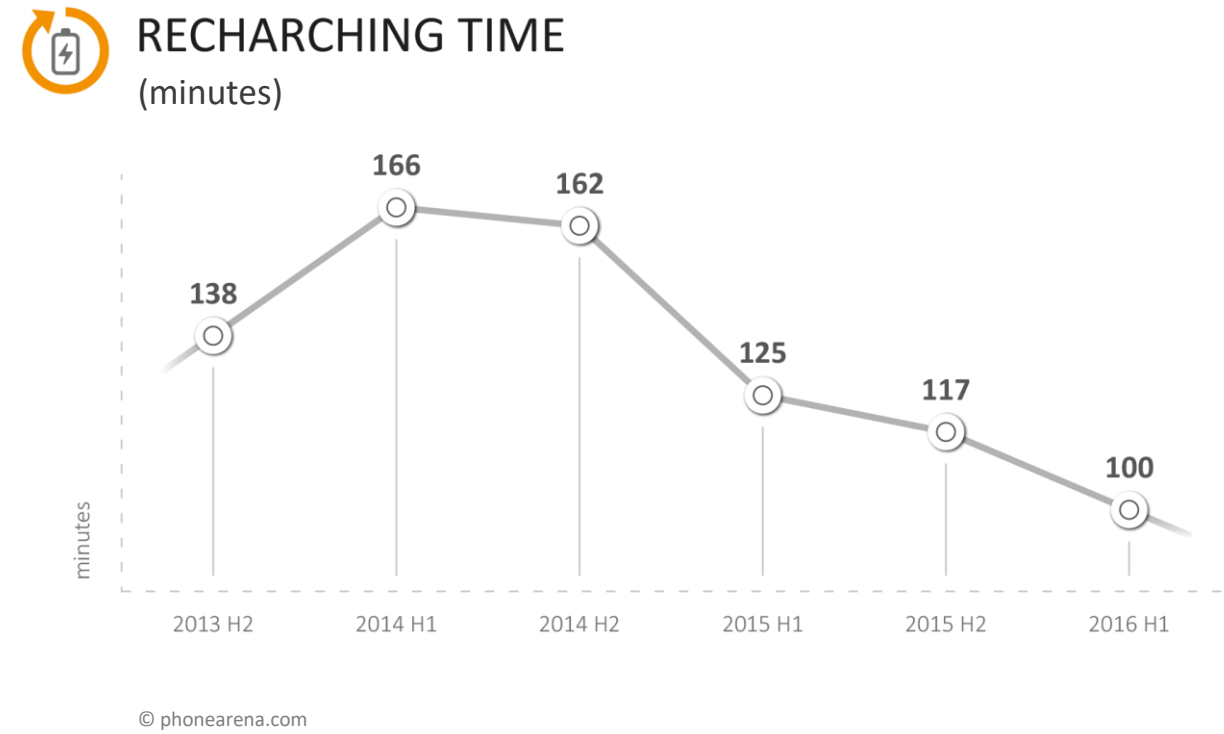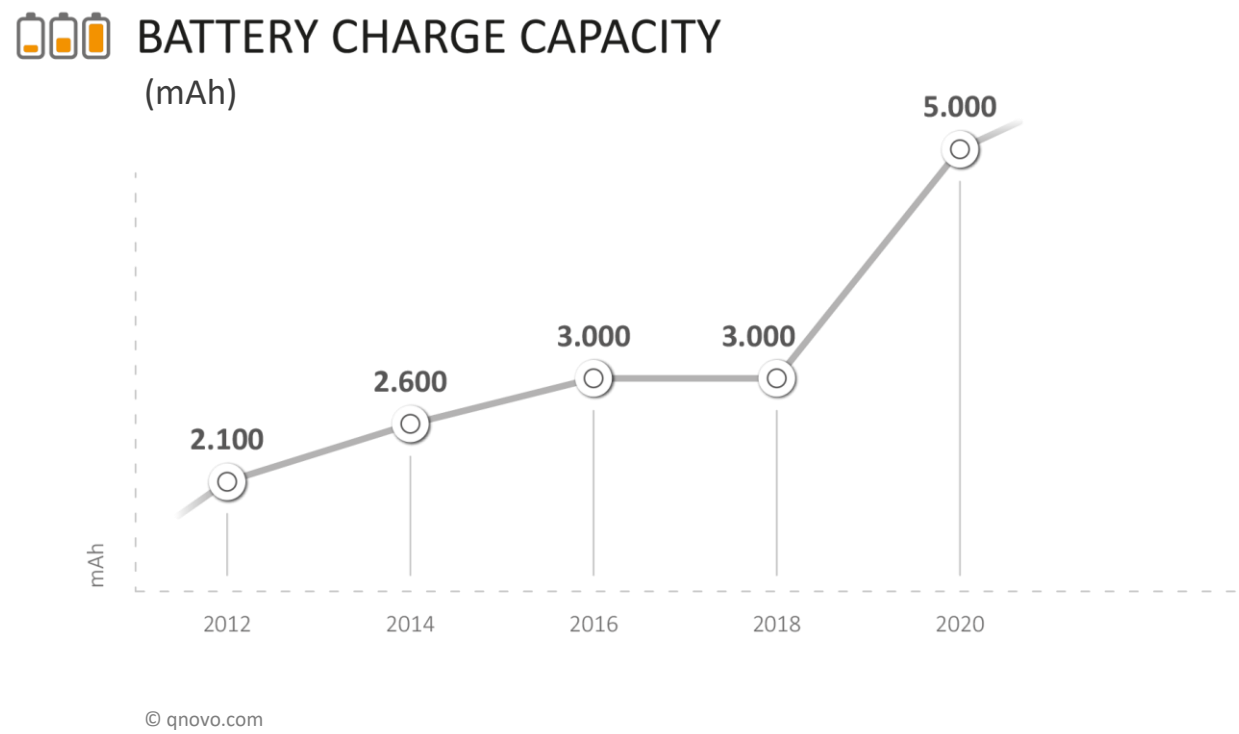- Many individual components
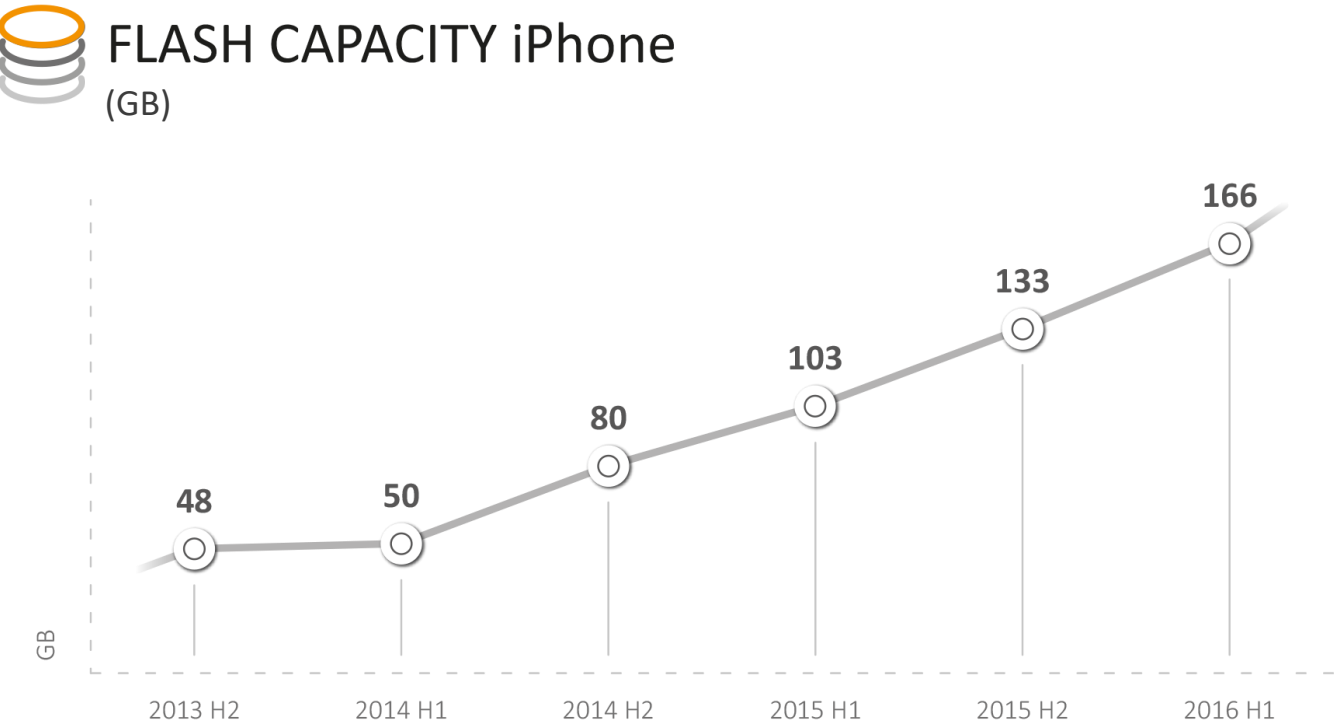

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10 years later: Technology has changed dramatically

BATTERY CHARGE CAPACITY
(mAh)

5.000 — 2020
3.000 — 2018
3.000 — 2016
2.600 — 2014
2.100 — 2012

mAh

2012 2014 2016 2018 2020

© qnovo.com

RECHARCHING TIME
(minutes)

166 — 2014 H1
162 — 2014 H2
138 — 2013 H2
125 — 2015 H1
117 — 2015 H2
100 — 2016 H1

minutes

2013 H2 2014 H1 2014 H2 2015 H1 2015 H2 2016 H1

© phonearena.com

10 years later: Technology has changed dramatically

FLASH CAPACITY iPhone
(GB)

48 — 2013 H2
50 — 2014 H1
80 — 2014 H2
103 — 2015 H1
133 — 2015 H2
166 — 2016 H1

GB

© countepointrreserach

BANDWITH PER GENERATION
(kbit/s)

9,6 — 2G
384 — 3G
3.000.000 — 4G
1.000.000.000 — 5G

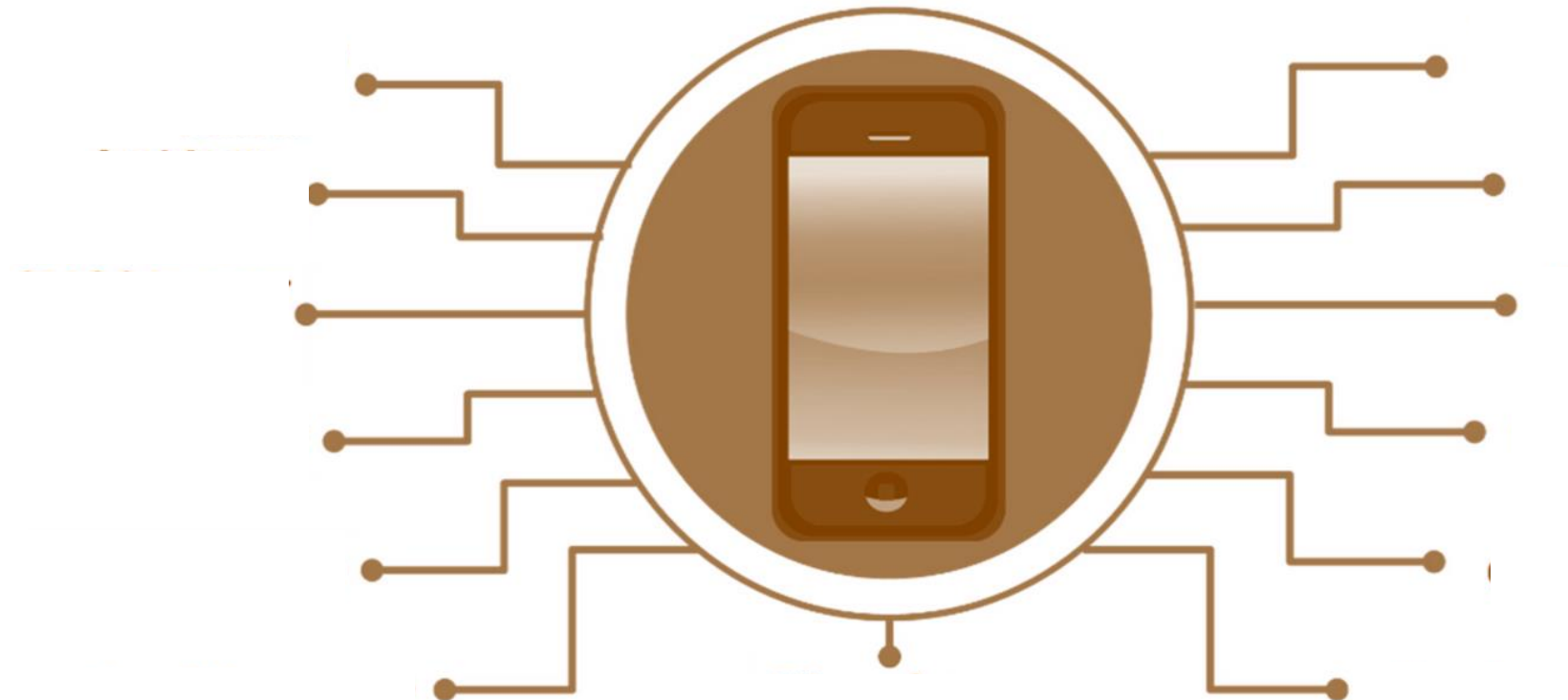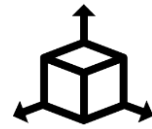(kbit/s)
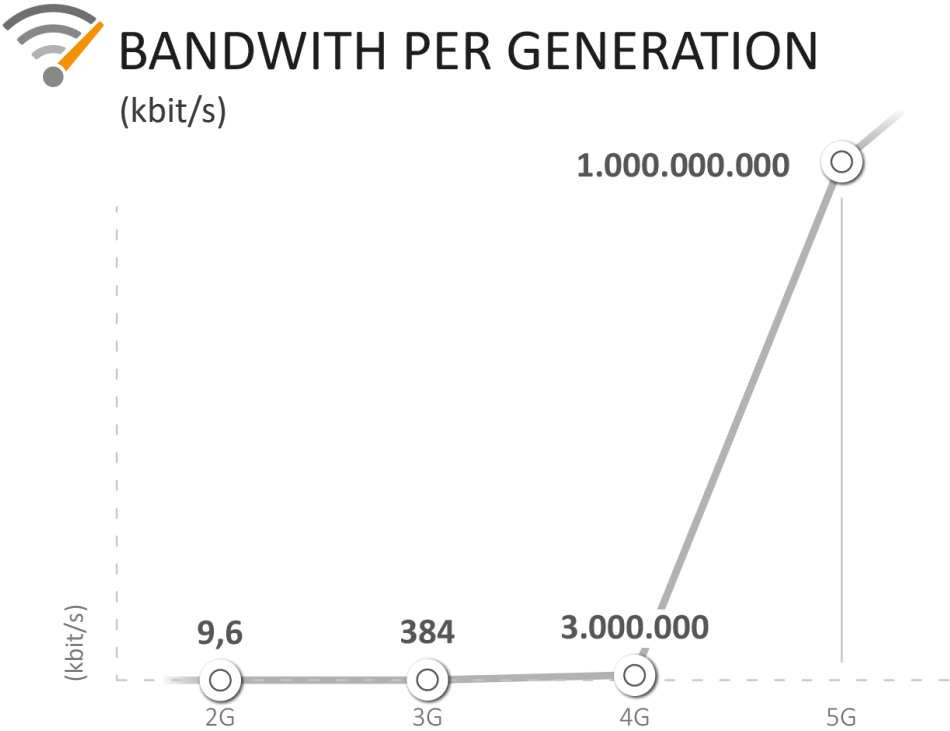
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Today's cell phones: More of a measuring instrument than a phone

© mdpi.com

Today's 4-finger scanners: Just a piece of chocolate

Factor 19

Factor 13

Mobile fingerprinting using smart phones: Three main concepts

Custom made mobile devices

Pro:
Tailor made options, use case specific design, FBI certified FP scanner, no dependency on product cycles

Con:
Expensive, maintenance

Using a COTS smart phone with a fingerprint scanner
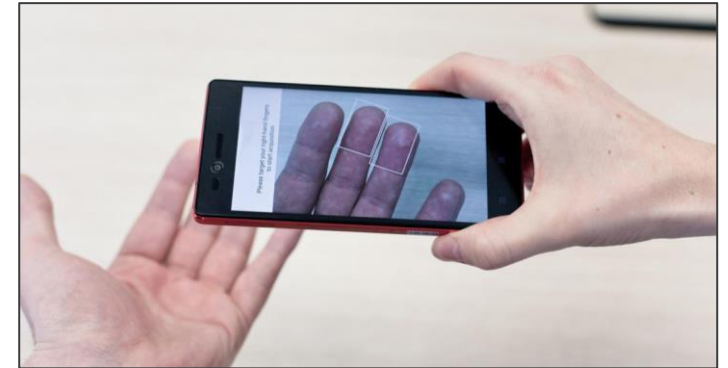

Pro:
Best in class phones, FBI certified fingerprint scanner

Con:
Dependency on COTS product cycle

Using a COTS smart phone only

Pro:
Best in class phones, no additional device/cable/wireless connection

Con:
New capture process, dependency on camera performance, no (yet) FBI certified FP sensor

Fingerprint scanner + Smartphone: Twice two options

Connection: Cable vs. wireless

Operation system

LIVETOUCH Flipcase: Smartphone + FAP 60 scanner

LIVETOUCH Flipcase: Smartphone + FAP 60 scanner

Access to camera

Access to phone buttons

Visibility of the display only for the officer

FAP 60 fingerprint scanner

Secure / cable / connector connection between phone and fingerprint scanner

One hand use

LIVETOUCH Flipcase: How it works

Slide in phone

Phone and scanner connected

Ready to capture

LIVETOUCH Flipcase: How it works

Closed position

Open 60°

Open 90°

For storage and transportation

For mobile use

For stationary use

Mission accomplished? Technically yes – on the ground?

2012   2022

Equipment / device shall
- ✓ Be battery-powered
- ✓ Allow the border guard to remain freedom of movement
- ✓ Ensure capturing biometric data with the required level of quality
- ✓ Be easy & quick to set up and use

Embedded elements in the same device
- ✓ Camera with dedicated flashes
- ✓ Fingerprint scanner allowing capture of 4 fingers
- ✓ Lightening feature
- ✓ Screen to prevent readings by more persons than intended
- ✓ Include GPS to record exact position of the border check

Protection level PUBLIC
eu-LISA
26/03/2019
Working Group on ICT Solutions for
External Borders (sea/land) Report

Gracias

Hvala

Merci

Obrigado

Děkuji

Grazie

Σας ευχαριστώ

Thank you

Köszönöm

Tack

Tak

Vă mulțumesc

Благодаря ви

Danke

Ďakujem

Hvala

Ačiū

Paldies

Tänan teid

Dank u

Kiitos

Dziękuję