

# CGM Investor & Analyst Conference 2017

Telematics Infrastructure Rollout

Uwe Eibich, Executive Vice President

12<sup>th</sup> October, 2017

Innovationsforum, Koblenz



# Agenda

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## Overview of the Telematics Infrastructure (TI)

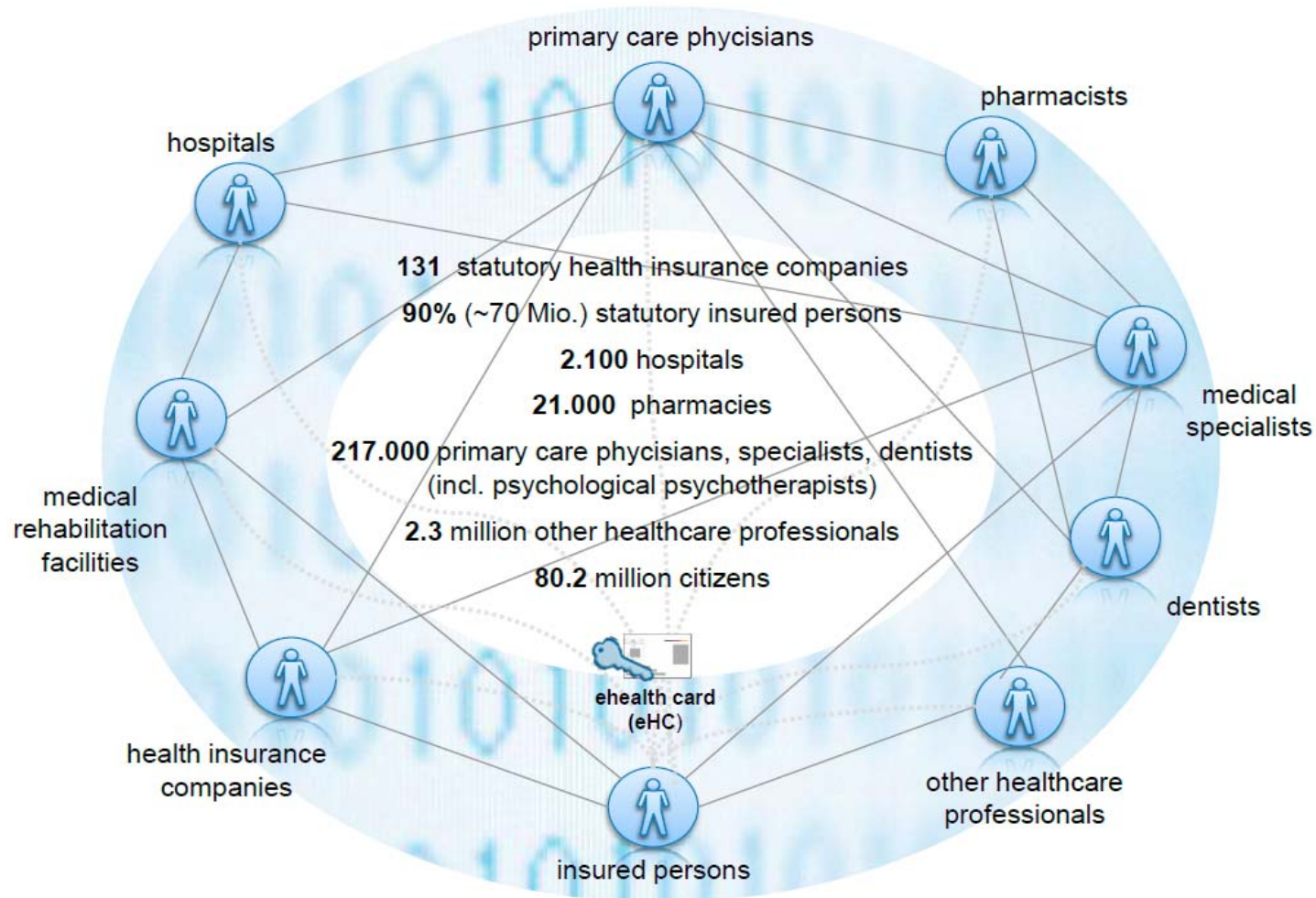
The ORS-1 Project

TI Rollout

Live Presentation of VSDM and TI Components

Market Status

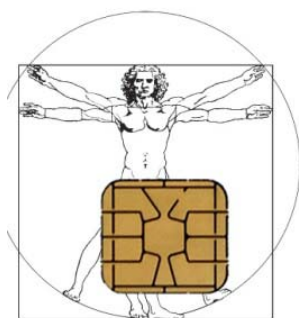
# The coming secure communication arena in German healthcare



Source: gematik

# The Telematics Infrastructure is based on the eGK

The purpose of the German “Electronic Health Card” (eGK) is to improve the medical care of patients



Sandra Koch  
Musterkasse  
123456789  
Versicherung

**Gesundheitskarte**



A123456781  
Versichertennummer

The eGK shall ensure that all healthcare providers have immediate access to all necessary medical information to deliver high quality and cost efficient care

# gematik GmbH is behind the eGK/TI

## Facts

- Founded in January 2005
- Owned by the 15 top organizations of the German health system (e.g. Bundesärztekammer, DAV - Deutscher Apothekerverband, Deutsche Krankenhausgesellschaft, GKV-Spitzenverband, KBV - Kassenärztliche Bundesvereinigung)
- Working closely with the Federal Ministry of Health

## Tasks

- Defining technical specifications for components, services and applications to be used in the Telematics Infrastructure
- Introduction, maintenance and enhancement of
  - eGK
  - electronic prescriptions
  - and additional applications



# Already the largest IT project ever in German healthcare

A total of 9 EU-wide tender processes have been completed :

- **Online Rollout Level 1 (ORS-1):** Testing of the Telematics Infrastructure in 2 test regions, each with 500 providers (doctors, dentists and hospitals). 3 contracts awarded through EU-wide tenders:
  - **LOS 1:** Construction and operation of decentralized components and necessary infrastructure services; testing in Region South-East (Award: T-Systems)
  - **LOS 2:** Construction and operation of decentralized components and necessary infrastructure services; testing in Region North-West (Award: Booz/CGM/KoCo consortium)
  - **LOS 3:** Construction and operation of the central services and infrastructure surroundings for the Telematics Infrastructure (Award: Arvato Systems)
- **G2 Cards:** 5 contracts for a new generation of chip cards awarded through EU-wide tenders:
  - **LOS 1 & 2:** Card Operating System (COS) for all card systems: eGK, HBA, SMC-B, gSMC-K and gSMC-KT (Awards: Giesecke & Devrient, T-Systems)
  - **LOS 3 & 4:** Production of all relevant cards to be used in the ORS-1 test regions: eGK, HBA, SMC-B, gSMC-K and gSMC-KT (Awards: Bundesdruckerei, T-Systems)
  - **LOS 5:** PKI infrastructure and associated services for Card Verifiable Certificates (Award: Atos)
- **Scientific evaluation:** 1 contract awarded through EU-wide tender for scientific evaluation of the two ORS-1 test regions (Award: Friedrich-Alexander-Universität)

# The German eHealth law 2016

On the 4<sup>th</sup> of December 2015, the German Federal Parliament (Bundestag) approved the eHealth law

The new law came into force on January 1<sup>st</sup> 2016

According to the German government, the Act has the following objectives:

- to establish the Telematics Infrastructure with its security features as the main infrastructure for secure communication within the healthcare system
- to assist in the introduction of beneficial applications of the Electronic Health Card
- to improve the structures of gematik and to widen its responsibilities
- to improve the interoperability of healthcare IT systems and promote telemedicine services

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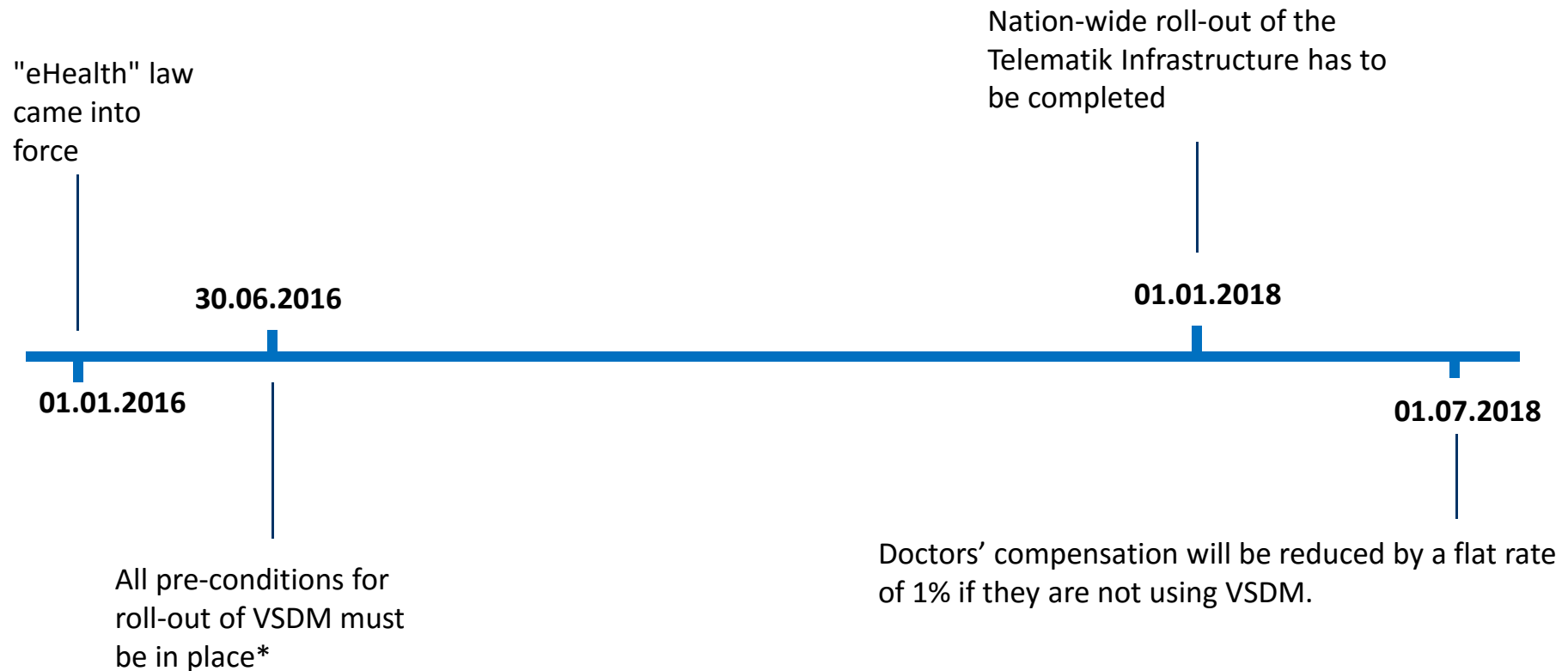


# The eHealth law gives a roadmap for future applications





# Timeline for the TI rollout stipulated in the eHealth law



\* If the deadline is not met, from 2017 on the expenditure in the budgets of the GKV SpiBu and the KBV must not exceed the expenditure of 2014 minus 1% each year until the action is performed (1% = app. 100 mio €)

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## **The ORS-1 Project**

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# Project Scope of ORS-1 (Online Rollout Stage 1)

- Develop, test and certify the necessary decentralized components: Connector (1x), Card readers (10x )
- Build a central VPN-access service and ensure its operations
- Recruit providers to participate in the pilots: Doctors (375), Dentists (125), Hospitals (5)
- Update and integrate 13 existing software applications : 5 physician, 5 dentist and 3 hospital information systems
- Test the following applications
  - Insured Master Data Management (VSDM)
  - Qualified Electronic Signature (QES)
  - Secure communication between healthcare providers (KOM-LE)
  - The connection to a “secure internet service” (SIS)
  - The connection to existing networks using the example of the “Secure Network of KVs” (SNK)
- Service und support of pilot installations for about 3 years

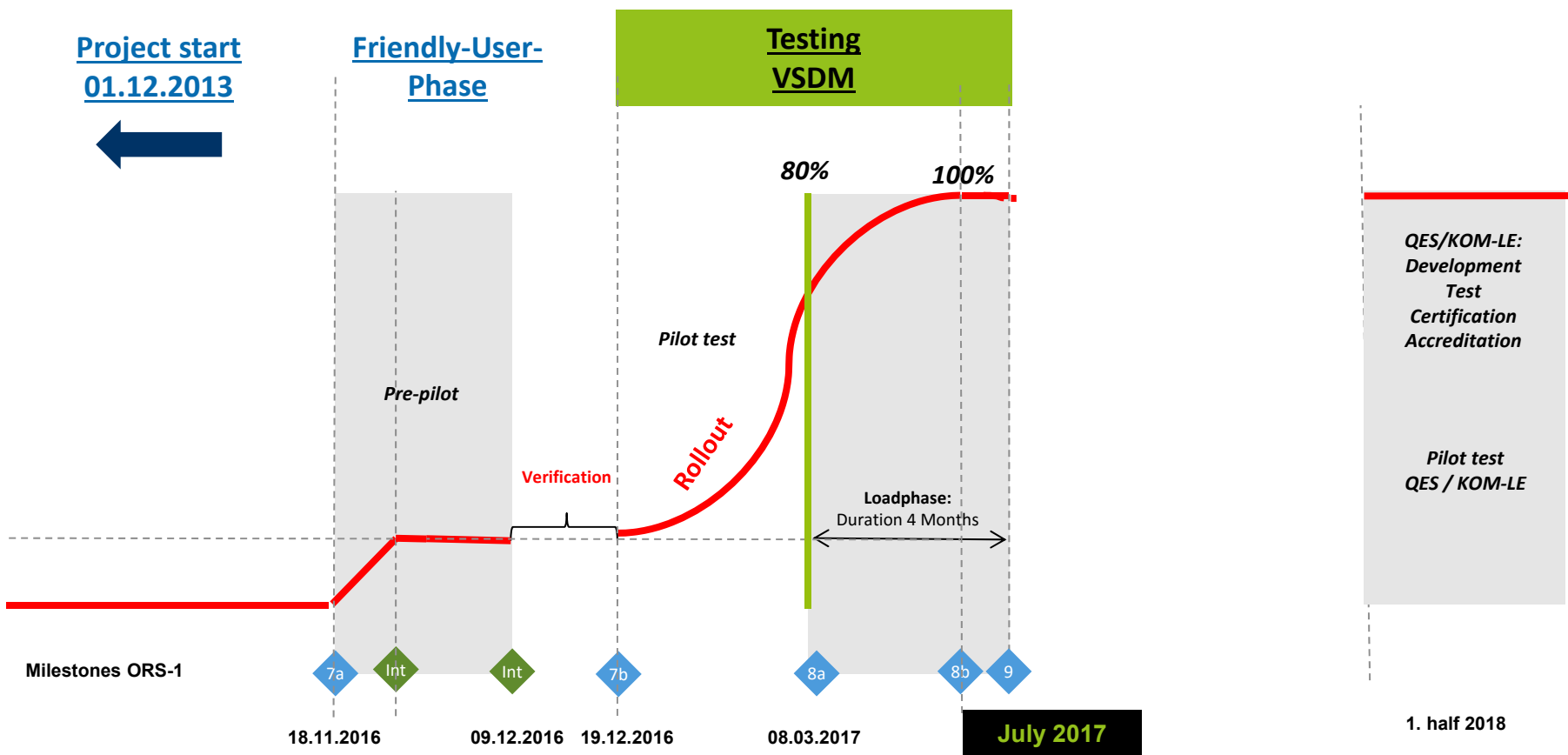


# Expert companies and organizations have contributed



Zulieferer / Nachunternehmer					
PVS	Z-PVS	KIS	Kartenterminal		HSM-B
			Stationär	Mobil	VPN Zugang
 CGM (Medistar)	 CGM (Chremasoft)	 CGM (HDP)	 gt GmbH		 AuthentiDate International AG
 CGM (Turbomed)	 CGM (Z1)	 AMC GmbH	 Ingenico Healthcare GmbH		 IBM GmbH
 CGM (Albis)	 CGM (Z1 KfO)	 CSC/iSOFT Health GmbH	 CCV Deutschland GmbH		 CGM telemed
 Psyprax GmbH	 DAMP SOFT GmbH		 ZF Friedrichshafen AG		 secrypt GmbH
 HASOMED GmbH	 EVIDENT GmbH		 HID Global GmbH	 ZEMO GmbH	 Giesecke & Devrient GmbH

# The main VSDM milestone was reached in July 2017



# All VSDM objectives were achieved successfully

- On July 8, 2017, the six-month VSDM trials ended
- All test requirements were met
- The project requirement of 500,000 eGK online transactions was clearly overfilled with 1.3 million eGK online transactions
- The average processing time for card updating was 3.6 seconds, clearly below the gematik requirement (6.1 seconds)
- The test report was handed over to gematik on July 28<sup>th</sup>
- The overall system was stable and performant in testing
- All problems encountered were addressed during testing and have been remedied
- Experience and findings have led to changes to specifications and processes for live operation

# The ORS-1 project will now end

- The ORS-1 project will now end and gematik has already released a corresponding press release
- All remaining objectives will be reached in a market model in which companies can develop applications (QES, emergency data, e-medication plan etc.) and enter into a certification and accreditation process
- Cancelled parts of the project for the CGM consortium:
  - Qualified Electronic Signature (QES)
  - Secure communication secure internet service" (SIS)
  - The connection to existing networks using the example of the "Secure Network of KVs" (SNK)
  - Service und support of pilot installations for about 2 years (installation will be supported until 31.12.2018)
- gematik and CGM are currently negotiating the financial conditions for the early cancellation



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The ORS-1 Project

**TI Rollout**

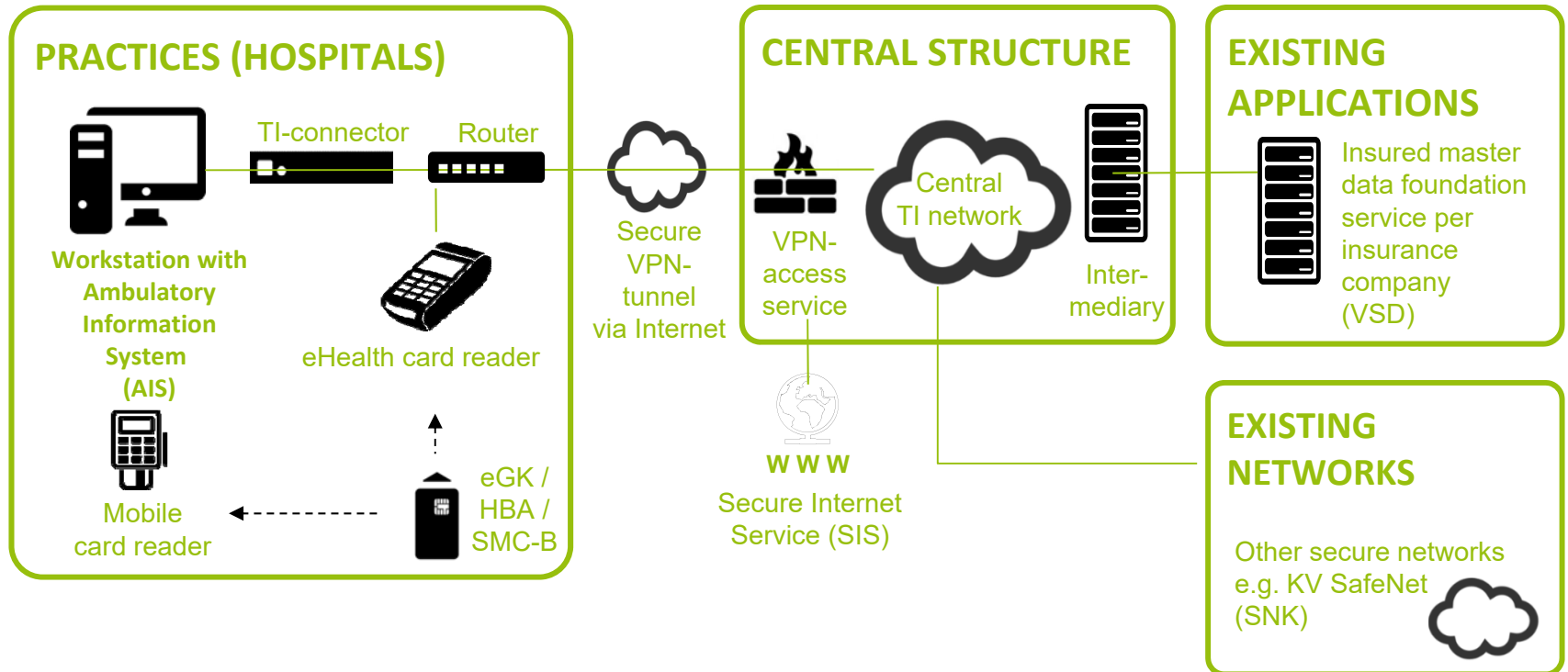
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# The nationwide roll-out has been manifested

- The shareholders of gematik have released the online productive operation (OPB) with effect from 1 July 2017
- The eHealth law provides for the deadline for the provision of all practices on June 30, 2018
- The Federal Ministry of Health (BMG) is expected to extend this deadline to 31.12.2018.
- This means that the TI rollout will have to be done in about 15 months

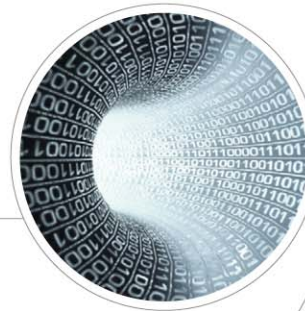
# Overall TI structure with central and distributed components



# The turnkey solution from CGM



VPN access service



Certified installation and training



TI connector: „KoCoBox Med+“



eHealth card reader: „ORGA 6141 online“



# VPN access service

- High security data centers at primary internet nodes in Frankfurt and Düsseldorf
- Local and geographical redundancy with more than 99.99% operational availability
- ISO 27001 certified secure operations by CGM TELEMED
- Secure Access to statutory applications including intermediary services for the eGK
- Secure Internet Service (SIS) with application layer malware detection
- Built by CGM TELEMED from September 2016 to September 2017
- More than 300 network devices
- 8 Mio EUR initial investment
- Scalability for up to 100.000 customers
- 10 GBit/s throughput
- ITIL compliant operations and services by CGM TELEMED



# Internet services are offered as add-on

- TELEMED is CGM's Internet Service Provider (ISP) in Germany
  - Operating since 1995
  - More than 14,000 customers
  - Major health care ISP in Germany and largest current operator of KV-SafeNet
  - ISO 27001 certified secure operations
- TELEMED internet access offering for TI (prices including VAT)
  - TELEMED SIS for basic secure internet access for 39.90 EUR per month
  - TELEMED Virtual Internet Flat with local cyber defense added for 39.90 EUR per month
  - TELEMED All-IP with local cyber defense added including DSL and telephony starting at 89.90 EUR per month



**TELEMED ALL-IP ADSL & VDSL  
Komplettanschluss**

# Certified consultants for installation and training

The initial training of the nationwide CGM sales and service partners was carried out in July 2017

- Regional events at 4 cities
- Nearly 600 participants were trained in technical and sales areas
- The seminars covered 3 days, divided into the following topics
  - Setup of the TI components
  - Connection to the AIS system
  - Sales and order processing

Further training courses have followed in September and will be offered on an ongoing basis

Supplementary topics and new innovations are continually updated by webinars



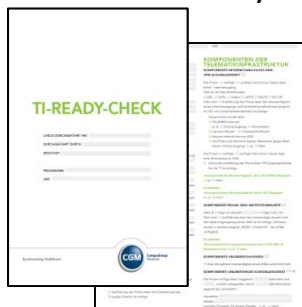
# Standardized installation process and tools

## Checking the existing installation

TI-checklist for customer



Checklist "TI Ready Check"



Recommended actions for the practice



## Doing the TI installation

Detailed installations manuals for the consultant



FAQ to handle special cases (Telephony system, Home office via VPN, ...)



Teaching material and product documentation



Installation and delivery protocol



List of recommended (replacement) devices



Support tools for the roll-out



## Test/installation of other products/services

List of eHealth products and services to verify / install



# 90 minutes total effort per installation

1

## Preparing the TI-installation

### Test / configuration , e.g.:

- Internet connection
- Network and power cabling for connectors and card readers
- Existing Internet router
- Firewall / necessary ports
- Existing services in practice, e.g. Laboratory connection, medical technology or telephony
- Conception / planning for the installation of the TI components as well as integration of other network devices

2

## Installation of important services

- Open required ports (e.g. for maintenance access)
- Activation of CGM eCockpit
- Check SNK function, Dale-UV, 1-Click billing etc.
- Check CGM eHealth Service
- Update to CGM Java 8
- Check virus protection
- Connectivity check

3

## Installation of TI-components

- Unpacking and visual inspection of the safety features
- Installation of card readers
- Installation of SMC-B
- Connector registration and configuration
- Pairing the card reader(s)
- Connection primary system (AIS)
- Practical training
- Acceptance and documentation
- Network configuration for SIS

90 minutes  
(+ "meet and greet" )

# Secure (certified) supply chain

Special requirements are placed on the TI product manufacturers regarding the transport, storage and delivery of the TI components to the end user

These requirements are in principle prescribed by the BSI (Federal Office for Information Security)

Process documentation must be certified by TÜV or other accredited body

These certified processes are then binding and must also be transferred to the sales and service partners within the scope of the contract relationship.

Examples:

- The transport process of the connector from manufacturing site (Austria) to a secure stock
- Receiving of goods only in person and to named, registered and designated employees
- Handover against signature (acknowledgment of receipt) and receipt returned to the consignor (consignment tracking)
- Location and status of the TI connector must always be tracked (in the warehouse / at the customer). Loss has to be reported immediately.

# Secure storage and logistics center (Koblenz)

- **Protected warehouse / space:** The connectors and card readers must be stored in a separate and lockable room.
- **Access controlled storage:** The storage area may only be entered by authorized persons.
- **Supervised storage / space:** The integrity of the storage space must be ensured and monitored regularly or permanently by suitable measures. Access and removal of connectors by unauthorized persons must be prevented.
- **Controlled warehouse / room:** The stock must be documented and the removal of connectors must be controlled (verifiable only by authorized persons).

# Marketing the installation procedure

## Key messages:

- 'TI-ready check' pre-installation visit (network structure, status of hardware, Internet connection etc.)
- Around 90 minutes estimated installation time for an average doctor and dental office
- Minimum interruption of doctors' daily work
- Short initial training and access to extensive further information material included
- Full certified and secured delivery chain



[https://www.cgm.com/de/telematikinfrastruktur\\_de/telematikinfrastruktur\\_film/film.de.jsp](https://www.cgm.com/de/telematikinfrastruktur_de/telematikinfrastruktur_film/film.de.jsp)

# TI components offered by CGM



- **Connector KoCoBox Med+**

Highly secure access point of the practice / clinic in the TI and connection of the primary systems and card readers

- **eHealth card terminal (stationary / mobile)**

Reading of eGKs, Practice or Institutional Cards (SMC-B) and Healthcare Provider Certificates (HBA)

- **Connection to primary systems (AIS, ZIS, KIS)**

Doctor / dentist software supports connector and VSDM service

## Separately, each installation / provider must get:

- **Practice or Institutional Card (SMC-B)**

Connection to the TI only possible if practice or hospital is registered and equipped with SMC-B

- **Health Professional Card (HBA)**

Chip card for identification of the healthcare professional in the TI; Required for QES or medical value added services

# Own product KoCoBox Med+

## Supplier and overall design

- KoCo Connector GmbH  
(100% owned subsidiary of CGM)



## Important subcontractors:

- Software development
  - n-design GmbH (firmware)
  - os-cillation GmbH (application layer)
  - CGM Software GmbH (project management)
- Electronics engineering and manufacturing
  - BECOM Electronics GmbH (Austria)
- Standard Qseven form factor computer-on-module with ARM / NXP processor (running Linux)
  - Congatec AG





# Card readers and keyboards from 3<sup>rd</sup> parties



- ORGA 6141 online – Stationary OPB1 eHealth card reader  
MSRP: 594€ incl. VAT + gSMC-KT
- ORGA 930 M online – Mobile OPB1 eHealth card reader  
MSRP: 356€ incl. VAT



- EHEALTH-BCS Keyboard G87-1504  
MSRP: TBA



# CGM primary systems have already received accreditation



## Einführung der Gesundheitskarte

### Implementierungsleitfaden Primärsysteme – Telematikinfrastruktur (TI)

(einschließlich VSDM, QES, KOM-LE)

Version: 1.11.0  
Revision: \main\rel\_online\rel\_orst\rel\_opb1\63  
Stand: 21.04.2017  
Status: freigegeben  
Klassifizierung: öffentlich  
Referenzierung: [gemILF\_PS]

gemILF\_PS\_v1.11.0.doc  
Version: 1.11.0

© gematik - öffentlich

Seite 1 von 147  
Stand: 21.04.2017



## Doctors

- CGM Medistar
- CGM Turbomed
- CGM Albis
- CGM M1 PRO

## Dentists

- CGM Z1
- CGM Chremasoft
- CGM Higdent Plus

## Hospitals

- CGM Clinical

# Practice or institutional card (SMC-B) ordered separately

## Suppliers

- Bundesdruckerei  
(expected Oct, 2017)
- Medisign  
(expected Q1/2018)
- Trust-Center by Deutsche Telekom



To enable access to the Telematics Infrastructure, the chip of the SMC-B must be broken off and inserted in the security slot of the card reader

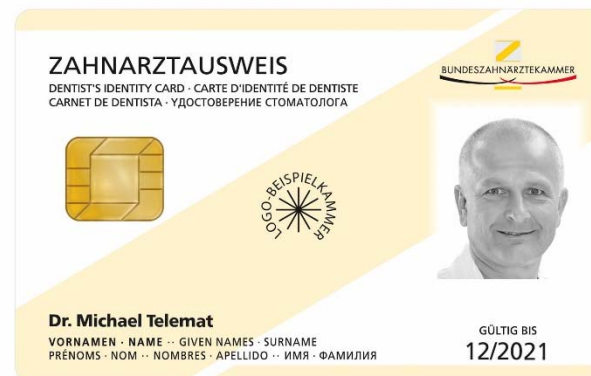
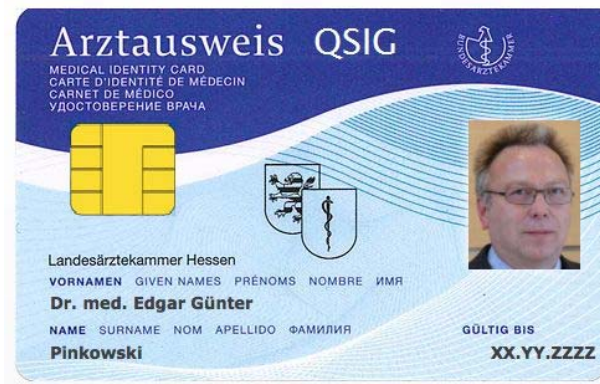
## ORDER AND DELIVERY

## KVs/KZVs



# Health Professional Card (HBA) also ordered separately

- Rollout expected in 2018
- Relevant for applications requiring Qualified Electronic Signatures (QES)
  - Medical documentation
  - Hospital discharge letters
  - Doctor's letters
- Other functions
  - Encryption/Decryption
  - Authentication
- Expected suppliers
  - Bundesdruckerei
  - medisign
  - Trust-Center from Deutsche Telekom



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# Financing agreement for doctors and dentists

## Lump sum reimbursement for connector and card reader(s)

- Lump sum compensation per practice and according to practice size
- Financing for a practice with up to 3 doctors/dentists:
  - 2017: in Q3: 3,055€, in Q4: **2,793€ (until 31.12.2017)**
  - 2018 : in Q1: 2,557€, in Q2: 2,344€, from Q3: **1,155€!**
- 1 connector with QES-functionality (in Q4 : 2,358€)
- 1 stationary card reader ( 435€)

## Lump sum reimbursement for start-up costs

- Connection charge for VPN service
- Interface to front-end software (AIS)
- On-site installation, configuration and training
- Downtime in practice during installation
- Fixed one-time compensation of **900€**

## Running costs

- Service and maintenance of connector, AIS etc.
- VPN service
- Until and included Q2-2018: 100€ per month
- From Q3-2018: 83€ per month

## Example Q4-2017

- A practice with up to 3 doctors/dentists:

Lump sum connector/card reader	2,793,- EUR
+ Lump sum other costs	900,- EUR
<b>= Maximum support</b>	<b>3,693,- EUR</b>

To connect the practice to the Telematics infrastructure

- To receive this financial support, the practice must install and put into operation the TI components by **31.12.2017**.
- As proof of connection, one VSDM service call must be performed with one eGK.
- All financing amounts are including VAT.



# Early bird offer launched in July



**"Early bird"-Offer**  
**Packet price 3.690,-**  
**Installation before 31.12.2017 guaranteed!**  
**for orders received before 30. September 2017**

1 connector KoCoBox Med+ (QES-ready)

1 card reader ORGA 6141 online

AIS integration module

Activation of VPN access service

Installation & commissioning

Introductory training

Running service costs p.m.

**Packet price**

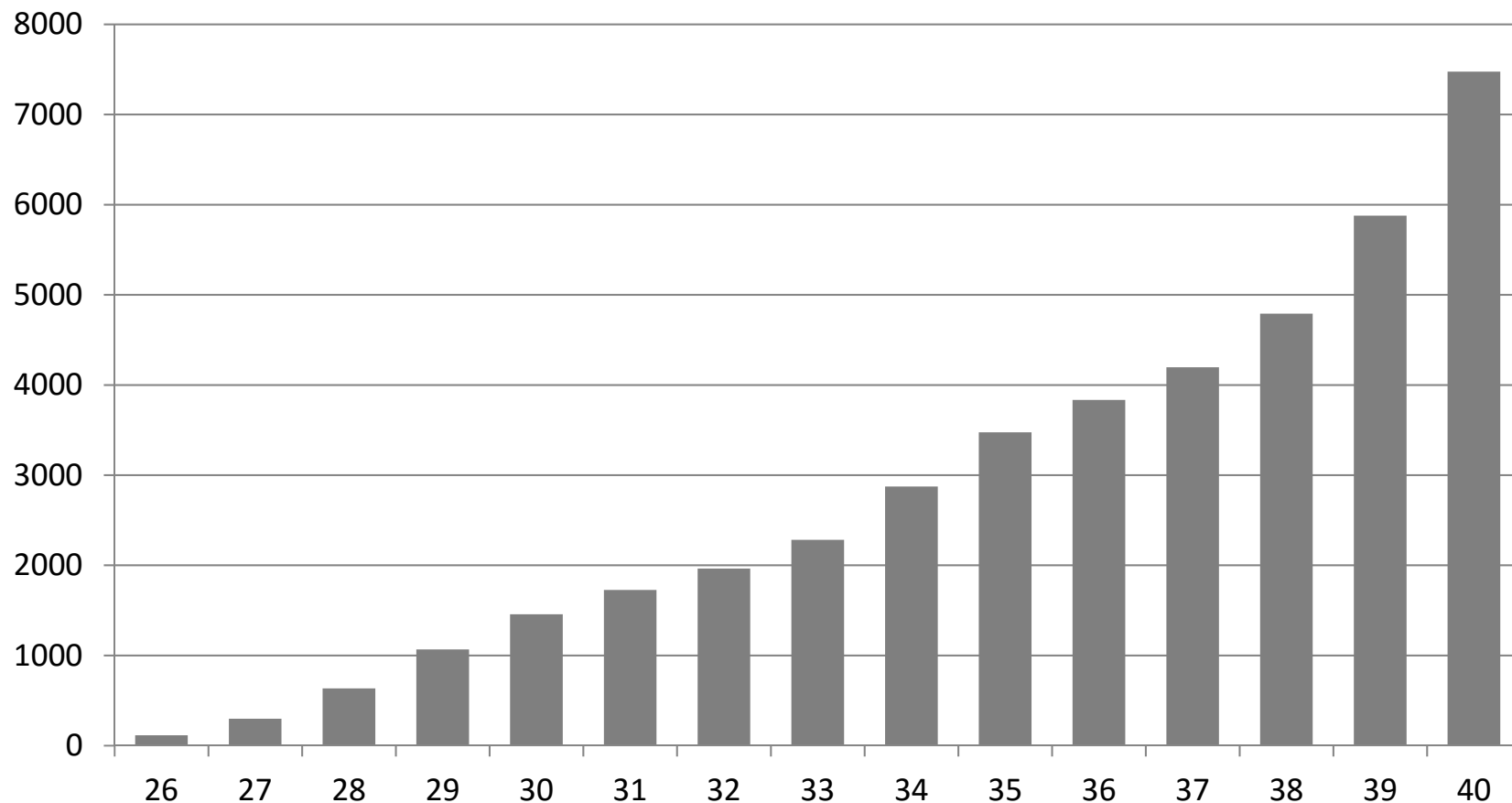
**3,690 €**

**82 €**

Practice with up to 3 doctors / dentists; Prices incl. VAT

# The early bird campaign gave 7,500 orders

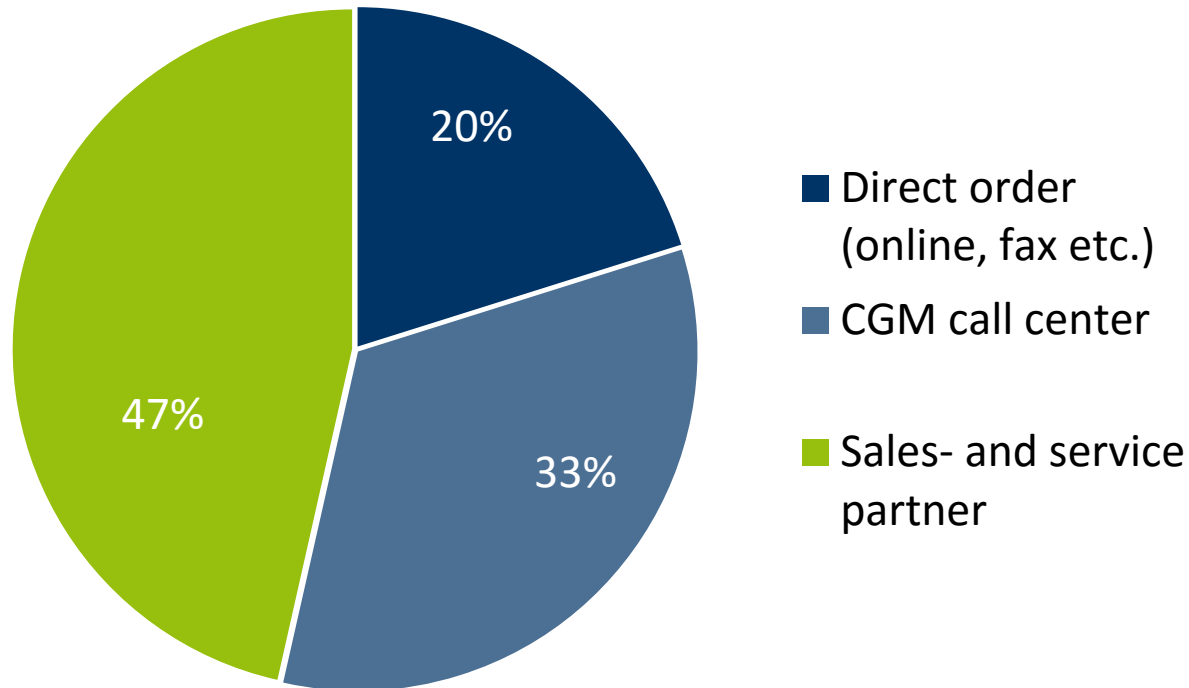
# orders accumulated / calendar week



# Over 50 percent direct sales

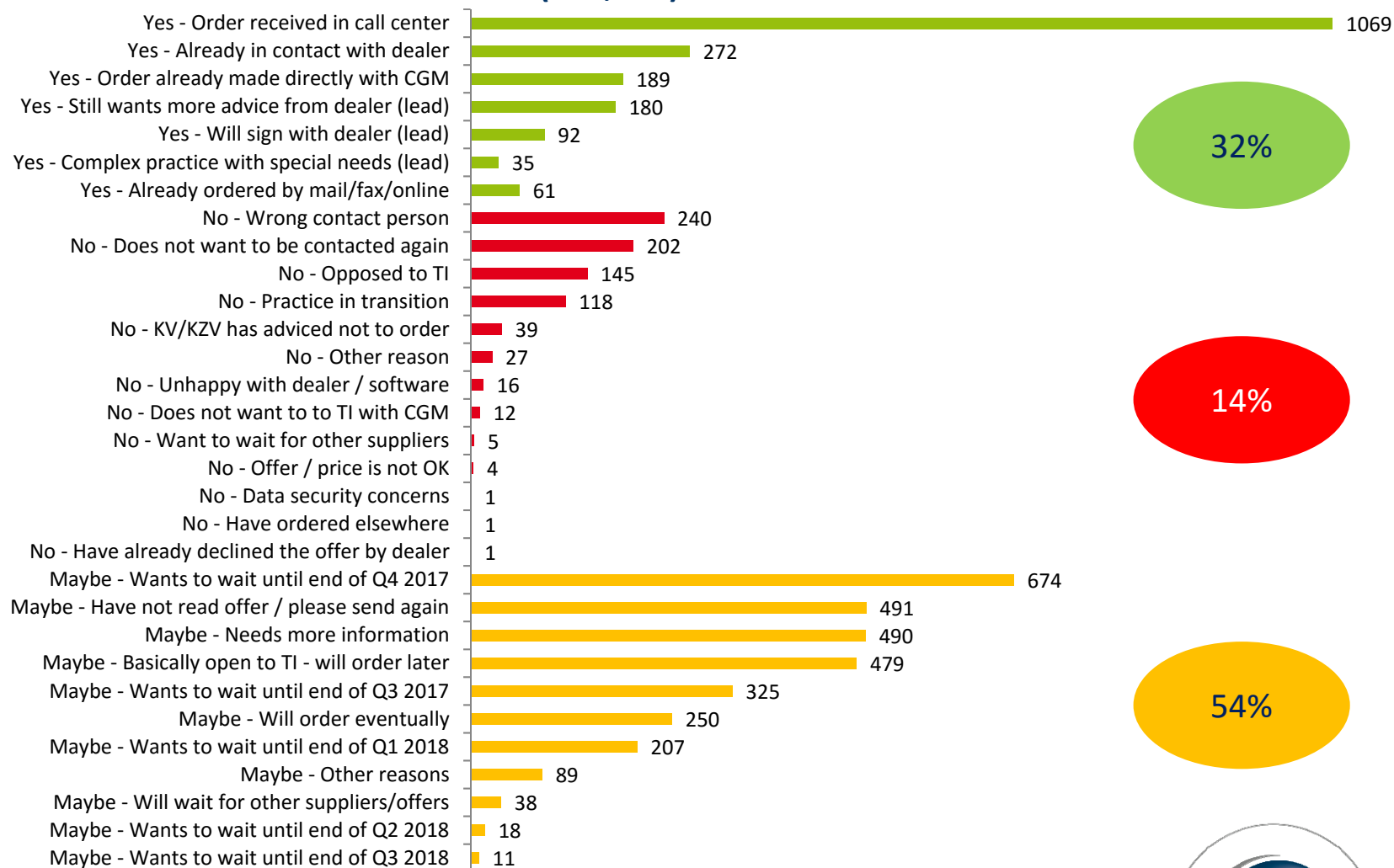
## Distribution channel for early bird orders

100% = 7,500 orders



# Over 80% have a basic intention to buy

## Detailed feed-back from sales calls (n=5,800)



# Customers are buying more than the minimum package

- Average product bundle consists of:
  - 1 x connector KoCoBox Med+ (QES-ready)
  - 1,4 x card reader ORGA 6141
  - 0,5 x mobile card reader ORGA 6141
  - AIS integration module
  - Services : Activation of VPN access service, installation, training
- We signed 7,500 early bird orders with a total order value of EUR 26 million (excl. VAT and excl. running service costs)
- Average volume per order was EUR 3,450 (excl. VAT)

# Autumn offer until the end of the year

## CGM-HERBSTANGEBOT

FAX: 0261 8000-2399 | E-MAIL: [Bestellung.TI@cgm.com](mailto:Bestellung.TI@cgm.com)

CGM-INFOLINE: 0261 8000-2323

Sichern Sie sich Ihren Installationstermin! Auch für die letzten Termine in 2017 gilt das CGM-Versprechen: Entscheiden Sie sich jetzt für das CGM-Herbstangebot und wir bringen Ihre Praxis in die Telematikinfrastruktur – **garantiert bis 31.12.2017.**

**BESTELLEN SIE JETZT!**  
ANGEBOT GÜLTIG SOLANGE  
TERMINE IN Q4/2017 VERFÜGBAR.

### ✓ CGM-PAKET TELEMATIKINFRASTRUKTUR

1 Konnektor KoCoBox MED+ (QES-Upgrade wird bei Verfügbarkeit nachgeliefert)

1 stationäres ORGA 6141 online eHealth-Kartenterminal inkl. gSMC-KT

- Freischaltung VPN-Zugangsdienst (auf Wunsch auch für folgende Bestandsnetze):  
Sicheres Netz der KVen (SNK), Zahnärzte Online Deutschland im Gebiet der KZV Westfalen-Lippe oder das Bestandsnetz der KV Schleswig-Holstein

- Secure Internet Service (SIS) vorbereitet
- Installation und Inbetriebnahme in Ihrer Praxis
- Einweisung der Mitarbeiter in Ihrer Praxis

€ 3.690,-

TI-Integrationsmodul  
für CGM-Praxissoftware  
kostenfrei enthalten.

### ✓ CGM-SERVICEPAKET BETRIEB

Servicegebühren pro Monat:

- Konnektor KoCoBox MED+
- VPN-Zugangsdienst (aktuelle Bestandsnetze inklusive)
- TI-Integrationsmodul für Ihre CGM-Praxissoftware

€ 82,67

# Early bird orders expected to be delivered in 2017

- Certification (BSI) and accreditation (gematik) of components for live operation
  - Connector Waiting for green light
  - Card reader (Ingenico) Waiting for green light
  - VPN access service Waiting for green light
  - Central components (Arvato) Waiting for green light
- Production of hardware
  - Connector approx. 3,500 units per week
  - Card reader (Ingenico) “sufficient” (pre-production done)
- Installation capacity
  - 500 already trained service technicians can theoretically do 5,000 installations per week
- SMC-B cards
  - Bundesdruckerei expected ready in October
  - KVs and KZVs are getting ready for ordering and approval process

# Thank you for your attention!

## **CompuGroup Medical SE**

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