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Data protection vs. access convenience – card-to-card-authentication: the approach of choice

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Aim: Interconnection of all participants

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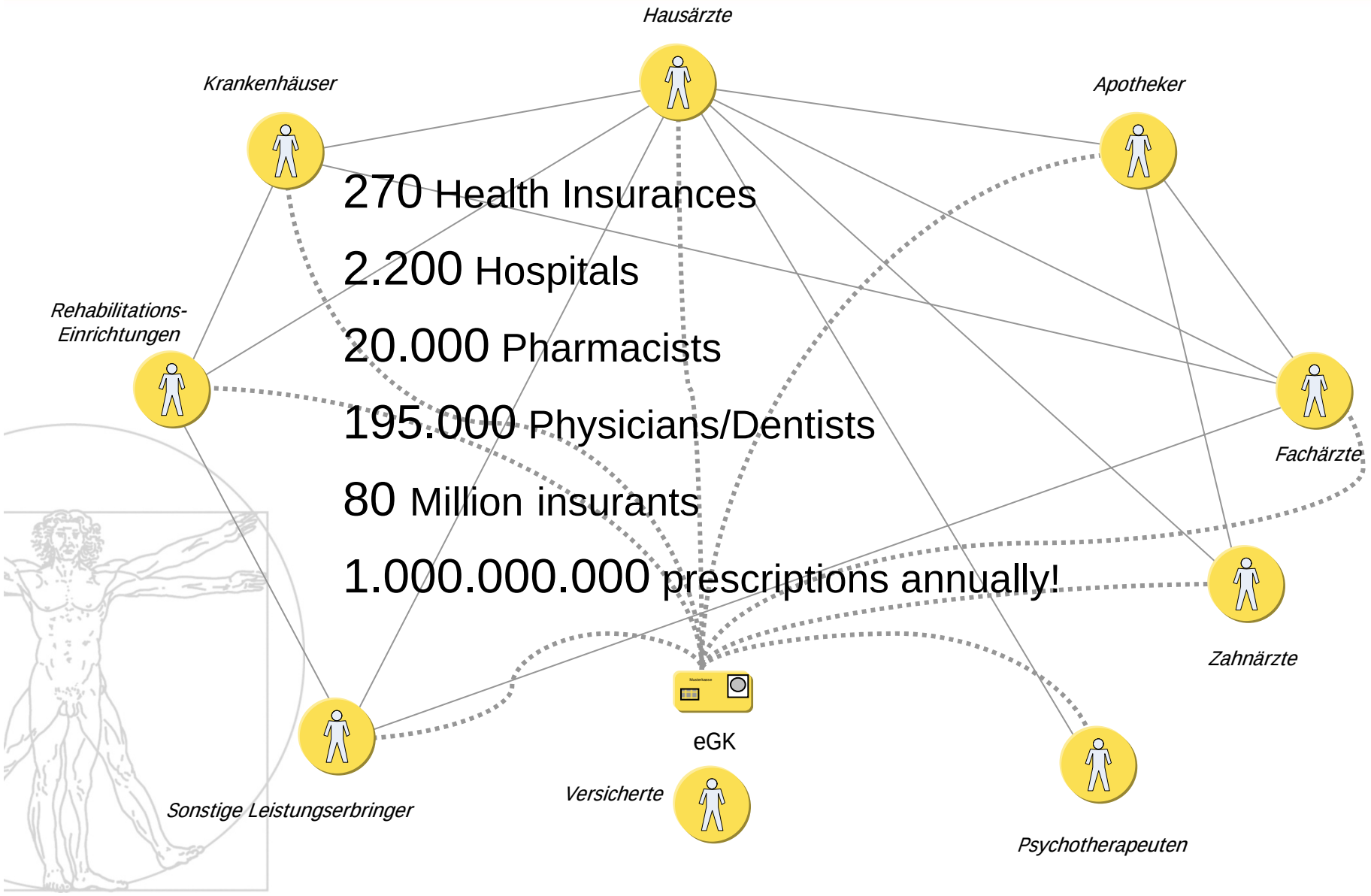

270 Health Insurances

2.200 Hospitals

20.000 Pharmacists

195.000 Physicians/Dentists

80 Million insurants

1.000.000.000 prescriptions annually!

eGK context

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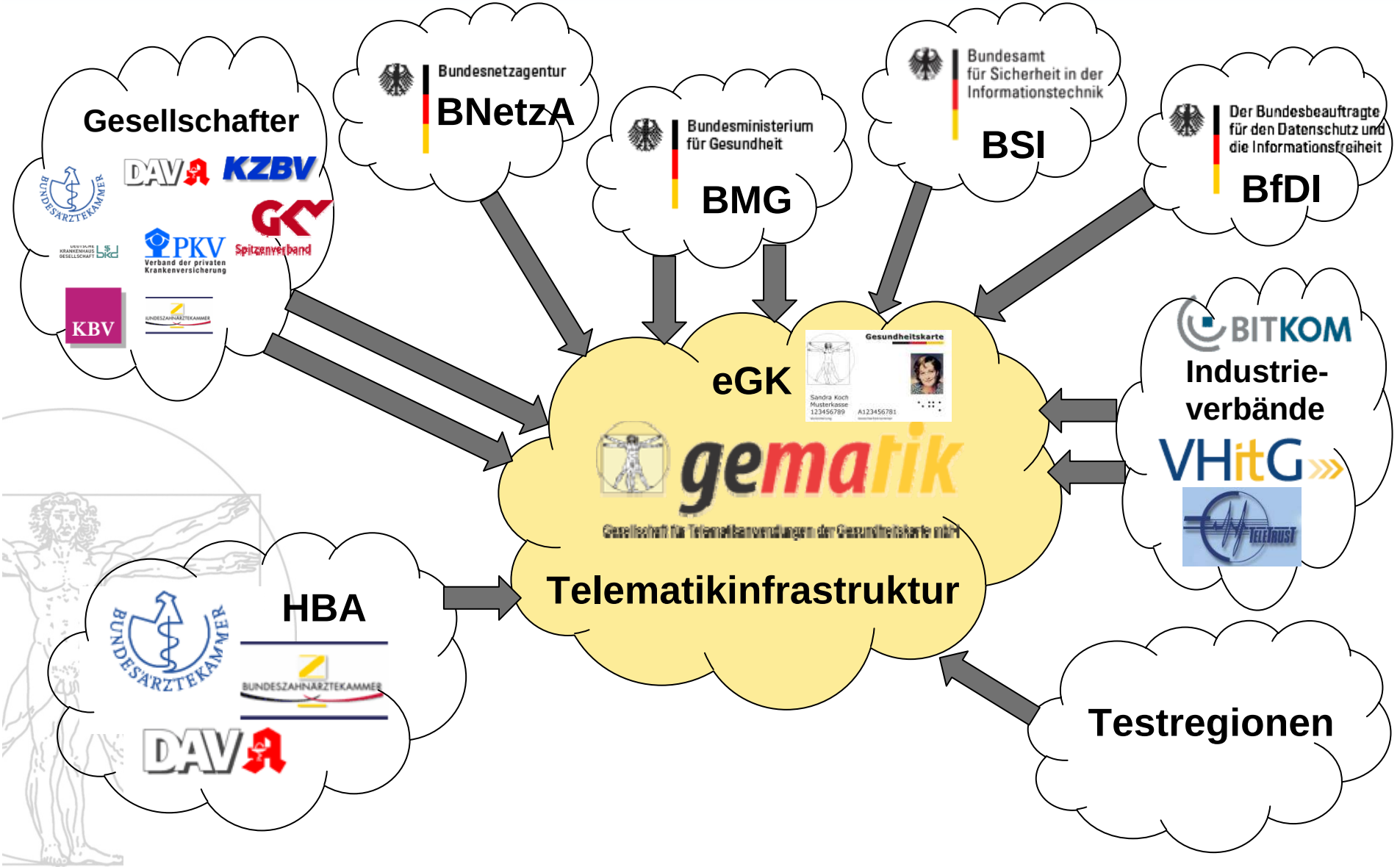

Step-by-step introduction

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- Functionality **(offline)**
  - insurant data (VSD)
  - e-prescription
  - emergency data

RELEASE 1

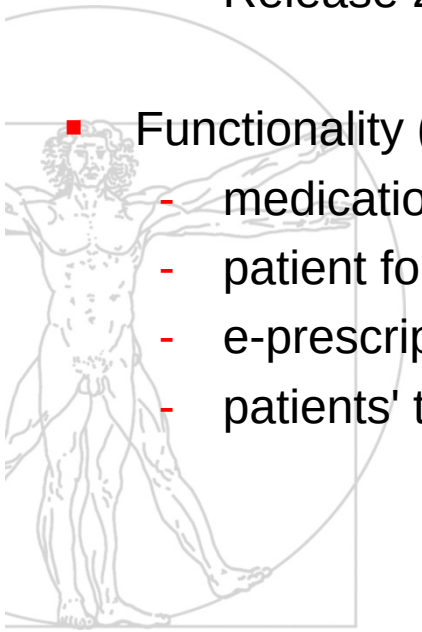
- Functionality **(online)**
  - insurant data, physician's letter and e-prescription
  - Release 2.K comfort-signature

RELEASE 2

RELEASE 2K

- Functionality **(online)**
  - medication-interaction-testing (AMTS)
  - patient folder
  - e-prescription: hospitalization, BTM, modality
  - patients' terminal (eKiosk)

RELEASE 3



Telematic infrastructure

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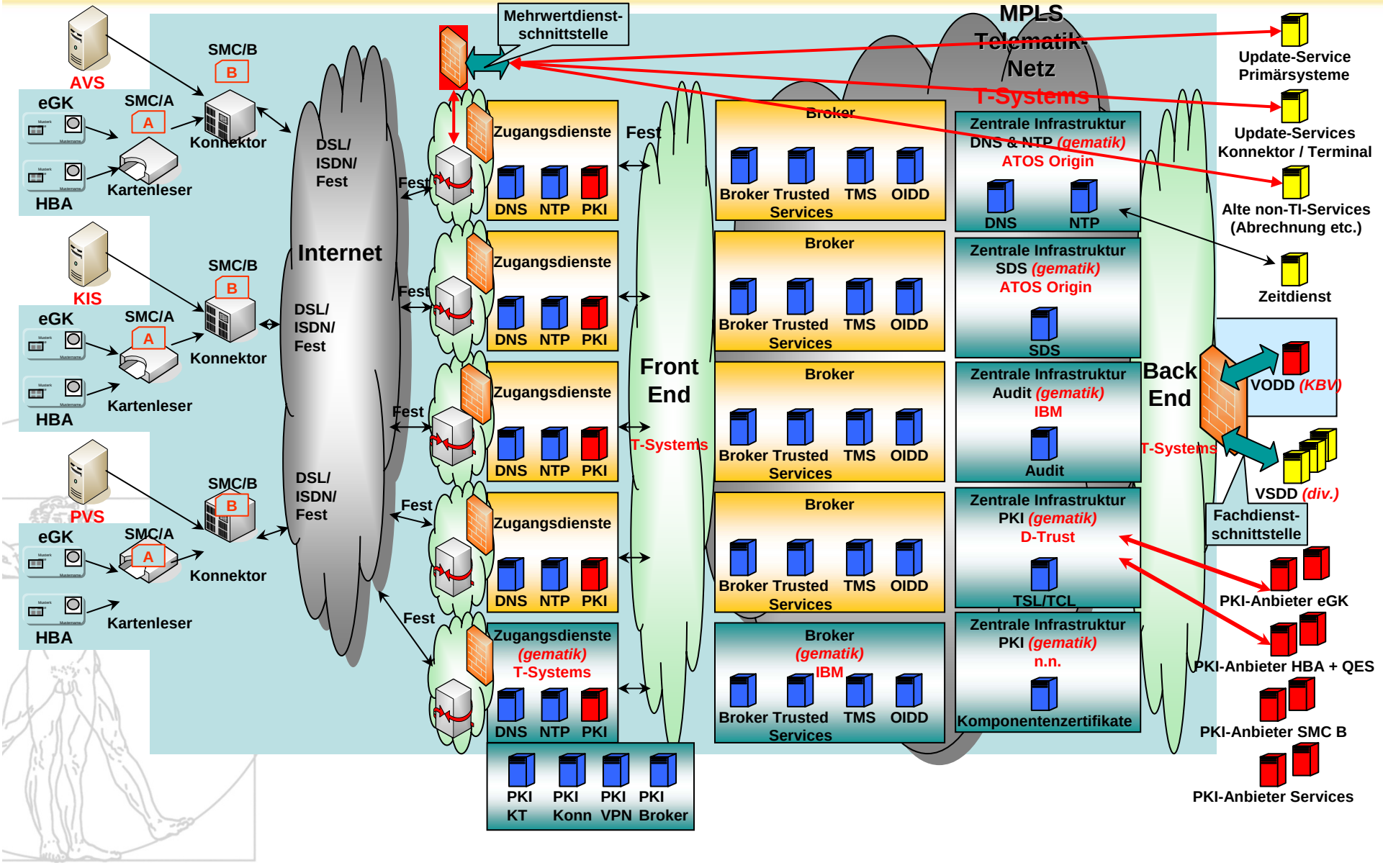

Cards

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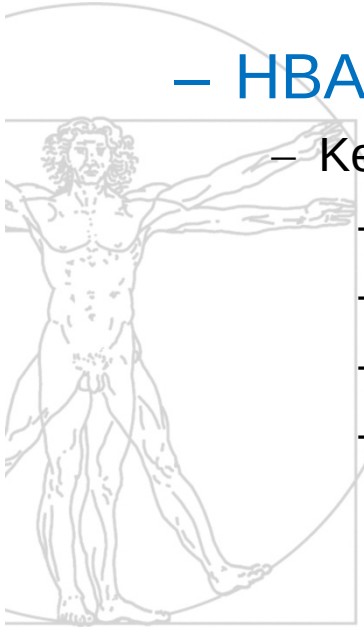
Cards of the telematic infrastructure:

- eGK: electronic health card
  - Insurant data
  - medical data
  - Keys and certificates (X.509 und CVC)
- HBA: electronic health professional card
  - Keys and certificates (X.509 und CVC)
    - qualified electronic signatures
    - Personal identity
    - Authentication
    - C2C-Authentication to SMC and eGK for setting the security level



Cards II

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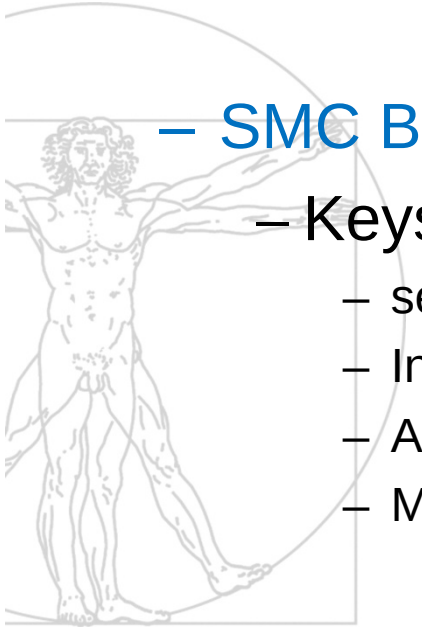
Cards of the telematic infrastructure:

- SMC A: Secure Module Card A
  - Keys and Certificate (CVC)
    - C2C-Authentication to eGK for setting the security level
    - Installing Trusted Channel to HBA



- SMC B: Secure Module Card B
  - Keys and Certificate (X.509 und CVC)
    - see SMC A
    - Institution identity (surgery, hospital, pharmacy)
    - Authentication (SSL-tunnel to Broker)
    - Message signature, decryption

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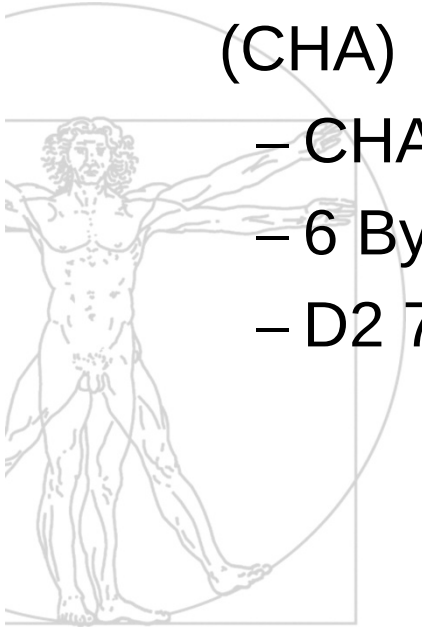
CVC: Card-Verifiable-Certificate

- ASN.1-coded certificate (ISO 7816-8)
- Is verifiable by a card with the help of a public CA-key
- Certificate without expiring date
- Certificate contains “Certificate Holder Authorisation” (CHA)
  - CHA hallmarks the role of the user/institution
  - 6 Byte prefix, 1 Byte profile-ID
  - D2 76 00 00 40 00 || 0x



Example CVC

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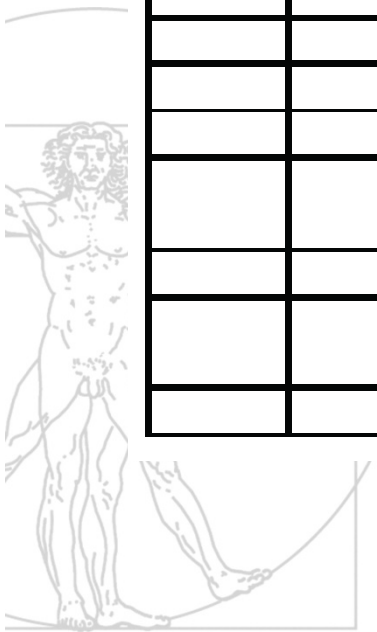
Tag	L	Wert		
'7F21'	'81CD'	CV-Zertifikat (205 Byte)		
		Tag	L	Wert
		'5F37'	'8180'	SIG.CA (128 Byte)
				Digital Signature Input für SIG.CA ('6A' ..'BC'):
				'6A' = Padding entsprechend [ISO9796-2]
				'04' = CPI
				'xx..xx' = CAR (8 Byte)
				'xx..xx' = CHR (12 Byte)
				'xx..xx' = CHA (7 Byte)
				'xx..xx' = OID (6 Byte)
				'xx..xx' = PK part 1 (erster Teil des Modulus, 72 Byte)
				'xx..xx' = Hash (20 Byte, Hash Input: DEs CPI ... PK, siehe Tabelle B.10)
				'BC' = Trailer
		'5F38'	'3C'	'xx..xx' = PK-Rest (Rest des Modulus, gefolgt vom Exponenten '00010001', 60 Byte)
		'42'	'08'	'xx..xx' = CAR (8 Byte)



Profile-IDs of CHA

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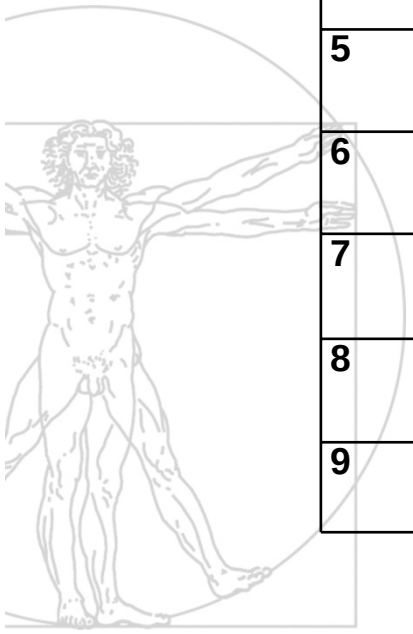
Profile	Role
1	eKiosk
2	Physician, medical secretary, SMC-B surgery/hospital
3	Pharmacist, pharmaceutical assistant, SMC-B pharmacy
4	Psychotherapist (HBA + SMC B)
5	HBA healthcare therapist
6	-
7	Ambulance officer
8	SMC B health insurance
9	SMC B other medical personal



eGK applications

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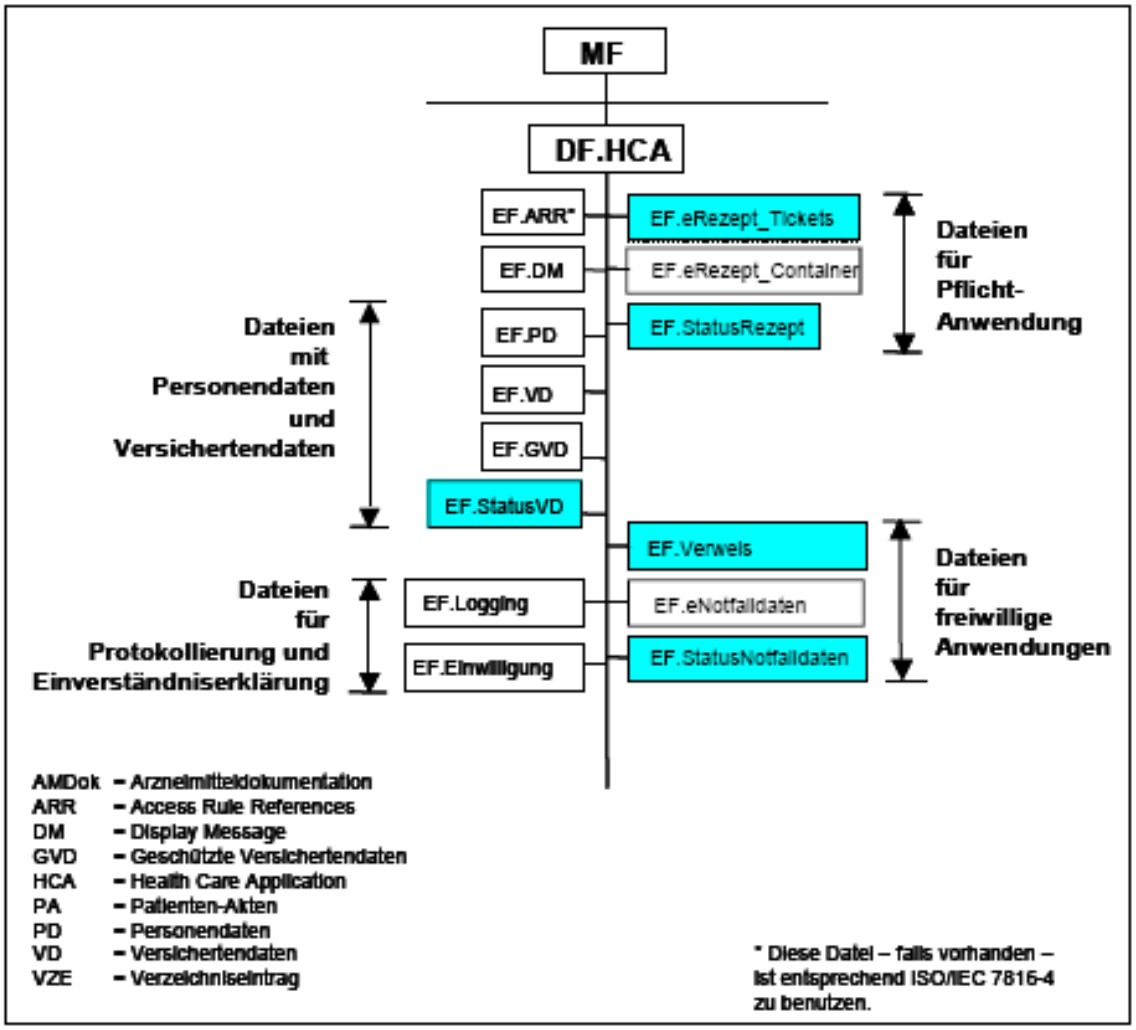

eGK access rules

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Profile	Personal data, insurance data	Protected personal data	Aggree-ment	link	Prescrip-tion	Prescripti on tickets	Emer-gency data	logging
PIN-home	R	R	RAD	RUAD	R	READ	AD	R
1+*	R	R	RAD	RUAD	R	READ	AD	R
2	R	R	(RUAD)*	(RUA D)*	RU	RUE	R(UE)*	
3	R	R	(RUAD)*	(RUA D)*	RU	RUE	R(E)*	
4	R	R	(RUAD)*	(RUA D)*			R(E)*	
5	R	R			RU	RUE		
7	R	R*					R	
8	R	R						
9	R	R		(RU)*	(R)*	(RE)*		

R=read, U=update, A=activate, D=deactivate, E=erase, *=+PIN.CH

eGK access rules for keys and certificates

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Profile	Cert Auth	PrK Auth	Cert Enc	PrK Enc	Cert AuthN	PrK AuthN	Cert EncV	PrK EncV
PIN-home	R	IS	R	V	R	IS	R	V
1	R	(IS)*	R	V*	R*	(IS)*	R*	V*
2	R	(IS)*	R	V*	R	IS	R	V
3	R	(IS)*	R	V*	R	IS	R	V
4	R	(IS)*	R	V*	R	IS		
5	R	(IS)*	R	V*	R	IS	R	V
7	R		R					
8	R		R		R	IS		
9	R	(IS)*	R		R	IS	R*	V*

R=read, I=internal authentication, S=electronic signature, V=decipher, *=+PIN.CH

Thank you for your attention!

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