

# Himss® *Türkiye*

**20-21 MART 2015**  
ANTALYA, TÜRKİYE

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**ANTILOPE -**  
*HOW TO REACH  
INTEROPERABILITY  
IN E-HEALTH*



Advancing eHealth  
Interoperability

# Adoption and take up of standards and profiles for e-Health Interoperability “Project presentation”

Ib Johansen, Antilope coordinator (MedCom)

<http://www.antilope-project.eu/>

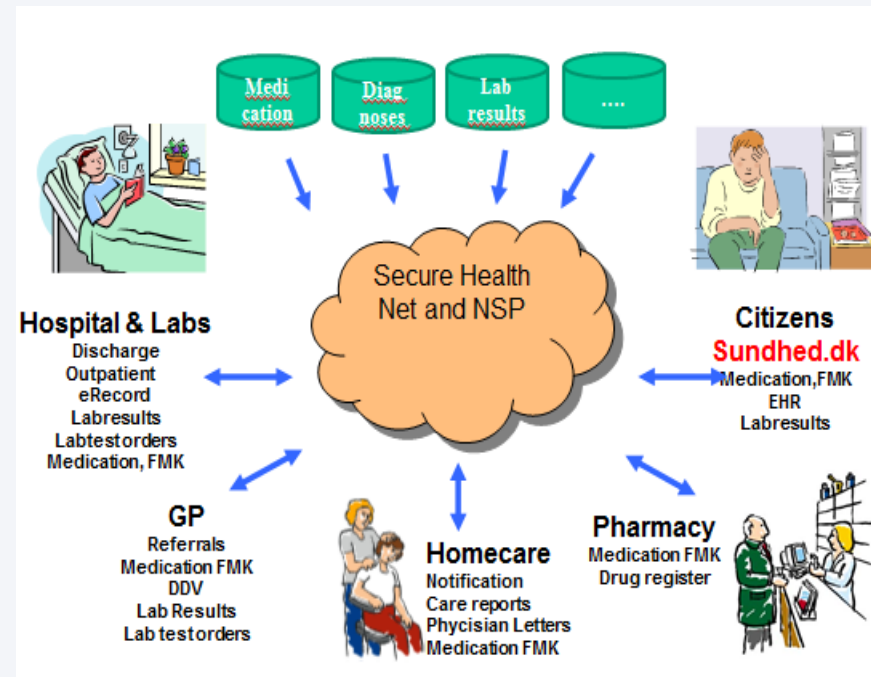
The ability of two or more  
systems or components  
  
to exchange information  
  
and to use the information  
that has been exchanged

*Source: Institute of Electrical and Electronics Engineers.*

*IEEE Standard Computer Dictionary: A Compilation of IEEE Standard Computer Glossaries.*

*New York, NY: 1990.*

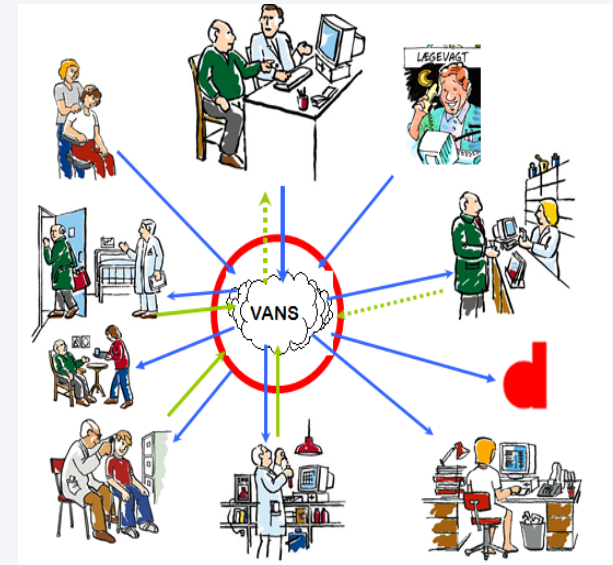
- Quality and efficiency cost savings
- Sharing and reuse of clinical data – better patient treatment
- Requires Interoperable systems
- Interoperable data exchange services
- eEIF - Interoperability identified by the eHealth European Interoperability Framework as a priority.





## ANTILOPE

- Thematic network
- To promote use of standards and profiles for e-Health interoperability and
- To foster their adoptions across EU





## **Antilope a thematic network:**

Drive adoption and take up of profiles for e-Health Interoperability

- Develop documentation and educational materials related to existing standards and profiles for eHealth interoperability from eEIF
- Define Quality Assurance testing guidelines for interoperability
- Identify Testtools for Interoperability
- Propose a labelling and certification process (EU level and national level)



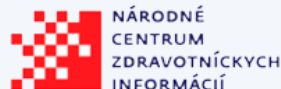
# Antilope Core and Expert Partners





**MEDIQ**

**Denmark, Norway, Sweden Finland, Iceland, Estonia, Lithuania, Latvia**



**Poland, Czech Republic, Slovakia, Hungary**



**Ireland, United Kingdom**



**Belgium, The Netherlands, Luxemburg**



**France, Switzerland,**



**Germany, Austria**



**Slovenia, Croatia, Serbia, Bosnia, FYE Macedonia, Montenegro**



**Italy, Malta**



**Portugal, Spain**



**Romania, Bulgaria, Greece, Cyprus, Turkey**





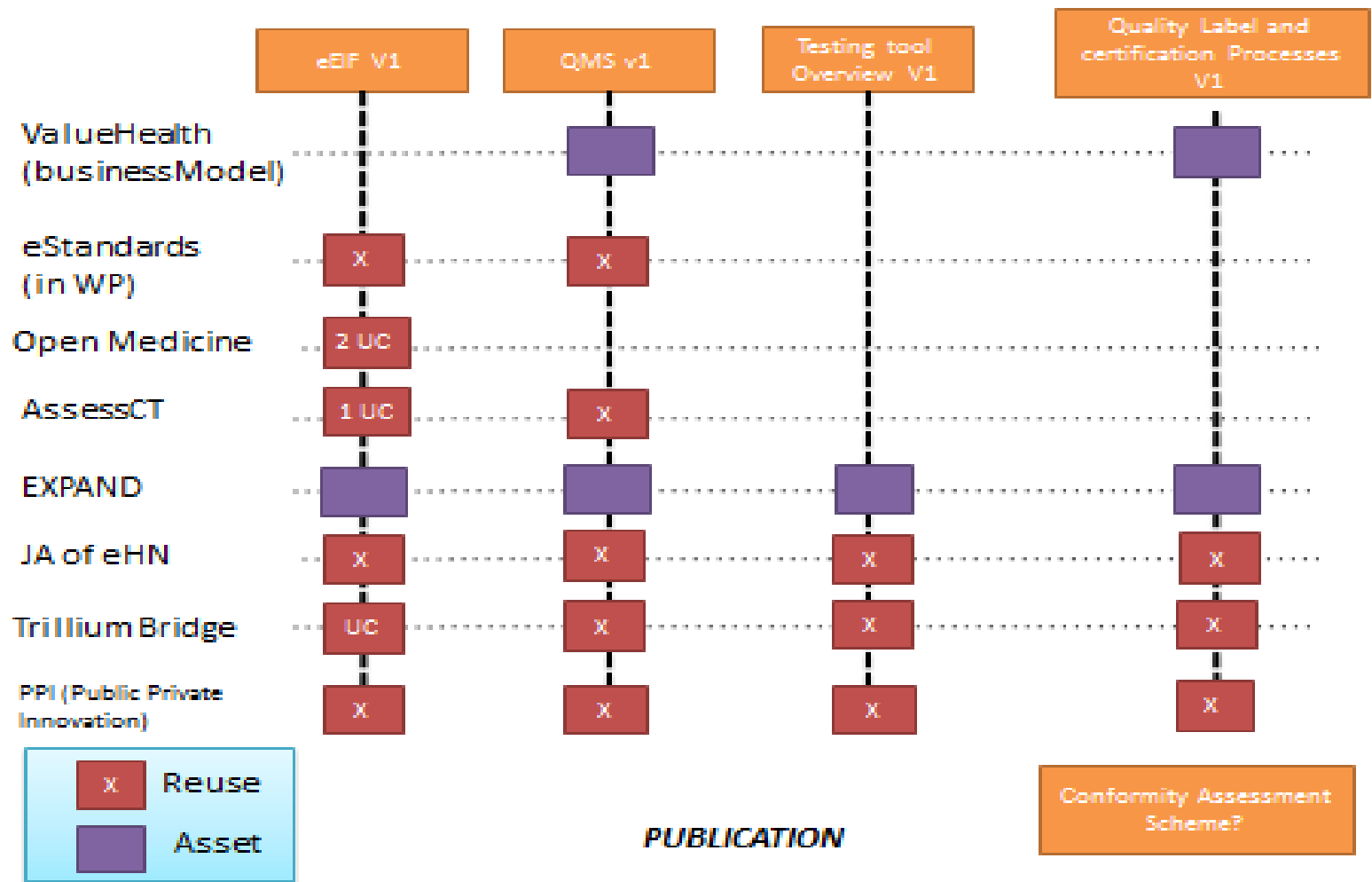
- **To agree that**
  - interoperability is essential for care safety and cost containment
  - interoperability of eHealth systems should never be taken as given.
  - To achieve interoperability use of appropriate standards and profiles supported by appropriate testing is needed.
  - interoperability testing should be based on a Quality Management System using testing tools
  - the eHealth European Interoperability framework is the first step in harmonising interoperability efforts over Europe (at country, region or local level).
- **To bring the audience to the point to**
  - include in your regulatory framework the concepts of proven and certified functional quality requirements, to reach national as well as cross border interoperability
- **To partner towards interoperability**



Common approach to achieving interoperability through testing and certification based on:

1. WP1: Refined Interoperability Use Cases from eEIP implementation guidance specification
2. WP2: Quality manual – Quality management system - QMS  
It allows Conformity Assessment Bodies e.g. testing laboratories, to provide high quality test reports when the QMS is implemented
3. WP3: Interoperability testing Tools Inventory  
A portfolio of testing tools that would be sufficient for testing the recognized profiles from the eEIF.
4. WP4: Interoperability Labelling and Certification  
Antilope provides organizational models, concrete examples and guidance that can be implemented to preserve consistency at each level. Specific recommendations based on the reusability of the testing plan, test cases and test tools.

# Antilope, Background, purpose, Outcome





**Denmark** 5, 5 mill inhabitants  
**>60 mill** documents shared / year  
**>75 IT** systems / > 60 vendors tested and approved by MedCom  
**120** profiles/standards



### Primary

- GP – EMR (8)
- Private specialists (12)
- Physiotherapists (5)
- Psychologists (10)
- Podiatrists (4)
- Dentists (5)
- Chiropractors (9)
- Pharmacies (3)
- Shared Care (3)
  
- Homecare (3)

### Secondary

- Health Insurance (3)
  
- Hospital EHR(5)
- X-Ray (6)
- Laboratories (9)



## Denmark

e-Prescriptions	(100%)
E-Lab test orders	(100%)
E-lab test results	(100%)
E-Referrals	(100%)
E- Discharge summaries	(100%)
E-Home care	(98%)
E- Reimbursement	(100%)
E-Tele Monitoring	(Developing)

**Savings > 200 mill €/year**

# Interoperability example

- An on-line example
- <http://www.medcom.dk/default.asp?id=111643>



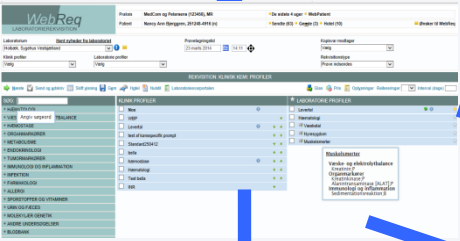
# Interoperability in real life



LAB test ordering

12 GP / PRIV spec. EMR  
3000 clinics

Webservices XREQ



REQ01

REQ02

REQ03

35 Biochem laboratories  
3 IT Vendors

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14 Blood Banks/IMM  
2 IT Vendors

16 Microbio labs  
3 IT vendors

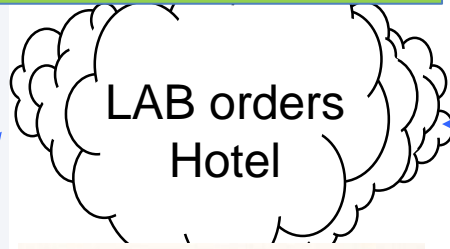
12 Histo/CYTO Labs  
2 IT vendors



# Interoperability in real life



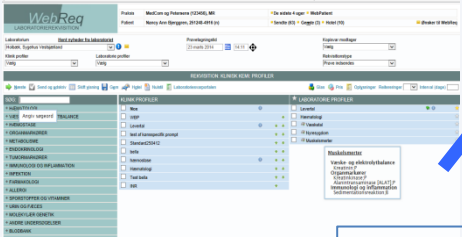
LAB test ordering



HOSPITALS (1200 wards)

12 GP / PRIV SPEC EMR

Webservice



WS-REQ01

WS-REQ02

WS-REQ02

32 Biochem laboratories  
3 IT Vendors  
14 Blood Banks/IMM  
2 IT Vendors

16 Microbio labs  
3 IT vendors

12 Histo/CYTO Labs  
2 IT vendors



# Interoperability in real life



LAB test results

12 GP / PRIV SPEC EMR

RPT01

RPT02

RPT03/04

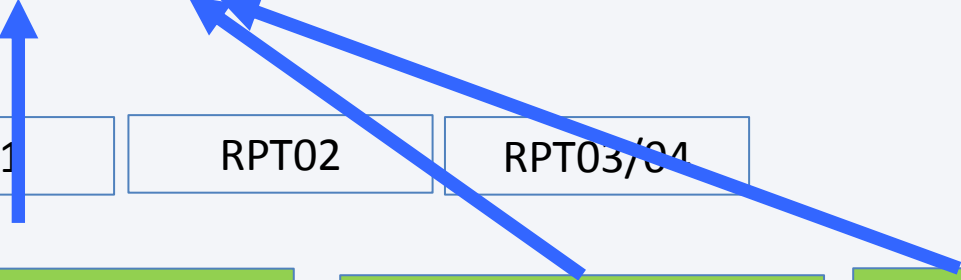
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# Interoperability in real life



LAB test results

12 GP / PRIV SPEC EMR

RPT01

RPT02

RPT03/04

32 Biochem laboratories  
3 IT Vendors

14 Blood Banks/IMM  
2 IT Vendors

16 Microbio labs  
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12 Histo/CYTO Labs  
2 IT vendors

WS-XRPT01

WS-XRPT02

WS-XRPT03/04

RPT01

PHMR-/HL7  
XRPT01

AnalyseType	Unit	Result	Reference	Order	Order Date	Order Time	Order Status	Order Source	Order Ref
Hæmoglobin	g/dl	12.5	12.0 - 16.0	1	20.05.11	10:00	Open	Lab	
Glukose	mmol/L	5.5	3.9 - 5.6	1	20.05.11	10:00	Open	Lab	
Kreatinin	mmol/L	0.1	0.0 - 0.1	1	20.05.11	10:00	Open	Lab	
Ureum	mmol/L	5.5	2.5 - 6.5	1	20.05.11	10:00	Open	Lab	
Calcium	mmol/L	1.0	0.9 - 1.0	1	20.05.11	10:00	Open	Lab	
Phosphor	mmol/L	0.8	0.7 - 0.9	1	20.05.11	10:00	Open	Lab	
Alkalisk fosfatase	U/L	100	30 - 120	1	20.05.11	10:00	Open	Lab	
Aspartataminotransferase	U/L	15	0 - 37	1	20.05.11	10:00	Open	Lab	
Alaninaminotransferase	U/L	15	0 - 37	1	20.05.11	10:00	Open	Lab	
Gamma-GT	U/L	15	0 - 37	1	20.05.11	10:00	Open	Lab	
Laktat	mmol/L	1.5	0.0 - 2.0	1	20.05.11	10:00	Open	Lab	
Prothrombintid (PT)	s	12.0	11.0 - 13.0	1	20.05.11	10:00	Open	Lab	
International Normalized Ratio (INR)		1.0	0.8 - 1.2	1	20.05.11	10:00	Open	Lab	

National- LAB Portal



Patient  
homemonitoring

# Interoperability in real life



SENTINEL  
DATACAPTURE  
QA

National- LAB Portal

12 GP / PRIV SPEC EMR

HOSPITALS (1200 wards)

Down/upload  
RPT01

Svaroversigt  
2512484916 Berggren, Nancy

Advarsel

- Følgende laboratorier har ikke svaret: Region H, Frederiksberg (Timeout), Region Midt, Århus Historiske data (IngenForbindelse), Region Midt, Århus Lab2 (Timeout), Region Syddanmark, LIMS Test (Timeout)
- Kun de 25 nyeste rekvæitioner er vist - Vælg en tidligere TI dato for at få vist de ældste svar

Udenforventlig version  
Send til eget journalsystem

Fra dato: 25-05-2011 Til dato: 31-05-2011 Laboratorier: Alle Analysefilter: Vis alt Sædler filter Sortering: Standard Egen Sædler sortering Hent oversigt

AnalyseType	Enhed	30.05.11	30.05.11	30.05.11	29.05.11	27.05.11	25.05.11	25.05.11	25.05.11	25.05.11
<b>Mikrobiologi</b>										
Mikrobiologi										
<b>Patologi</b>										
Patologi										
<b>Hæmatologi</b>										
Erytrocytter, vol.fr.:B	l						0.44		0.51 ↑	0.51 ↑
Hæmoglobin:B	mmol/l			1.9 +		0.0 ↓	0.2		10.2 +	10.2 +
<b>Væske- og elektrolytbalance</b>										
Kalium:P	mmol/L						3.7		3.8	3.8
Klond:P	mmol/L						10.8		10.8	10.8
Natrium:P	mmol/L						140		140	140
<b>Syre/base- og oxygenstatus</b>										
Hydrogencarbonat (standard):P	mmol/L						20.5 ↓		22.5	22.5
O2 sat.:H(aB)	l						0.80 +		0.57 ↓	0.57 ↓

<< Se ny patient | Tilbage til laboratorieoversigt

http://laboratorienedktest.dsdn.dk/Details/Mikrobiologi.aspx?rekId=4ca1bf6e-624c-4dfb-9a35-cf02d

WS-XRPT0x



SUNDHED.DK



# Interoperability some figures

- Lab Test Orders : 7,5 mill / year
- Lab test results: 20 mill/year
- Labtest orders at “Hotel” – 2,0 mill/year
- Access to Labportal: 1,5 mill / year





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Advancing eHealth  
Interoperability

**THANK YOU  
QUESTIONS?**

[ijo@medcom.dk](mailto:ijo@medcom.dk)

**HIMSS** 20-21 Mart 2015  
Türkiye 21/03/2015  
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