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CHIRURGIE ROBOTIQUE

CHEF DE SERVICE UROLOGIE
CHU AMBROISE PARE
MONS

JOURNEE AFISO
01 JUIN 2013

UROLOGIE ET ROBOTIQUE



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ROBOT ET UROLOGIE

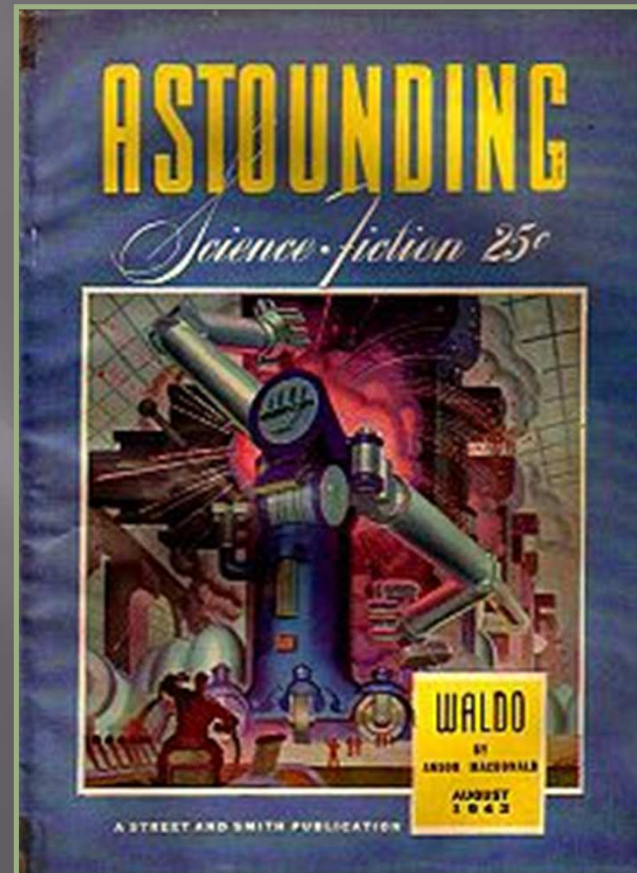
- ▣ 1. Historique
- ▣ 2. Implantation
- ▣ 3. Pourquoi un robot
- ▣ 4. Le Robot
- ▣ 5. Rôle à jouer
- ▣ 6. avantages/inconvénients

The Beginning - Science Fiction...



Robert A. Heinlein – Science Fiction Author

1942 original publication magazine cover



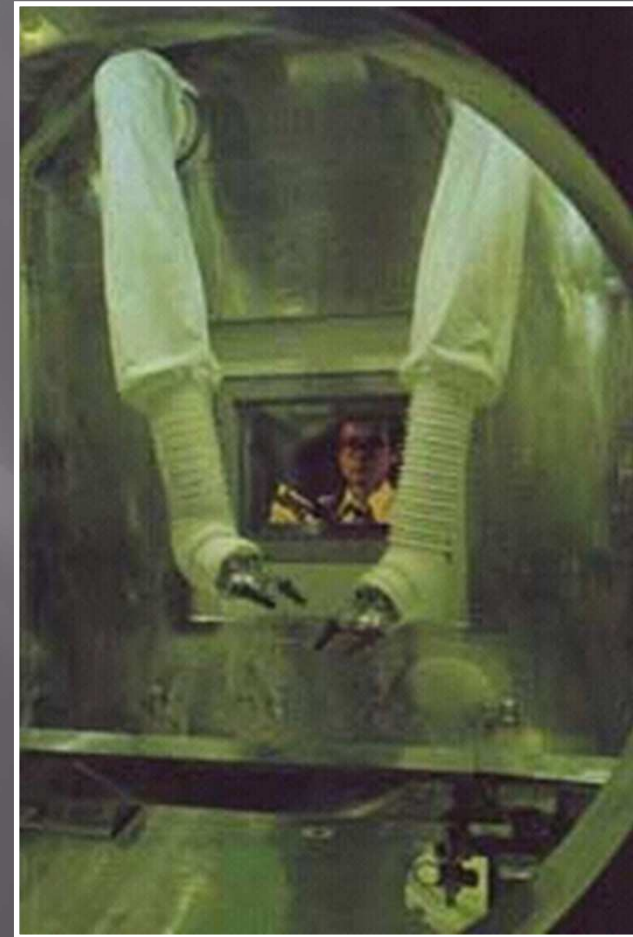
Reality - Innovation of Telepresence

- 1950'S
- Nuclear Telemanipulation
- Master-slave relationship



CENTRAL RESEARCH LABORATORIES

A **DOVER** DIVERSIFIED COMPANY

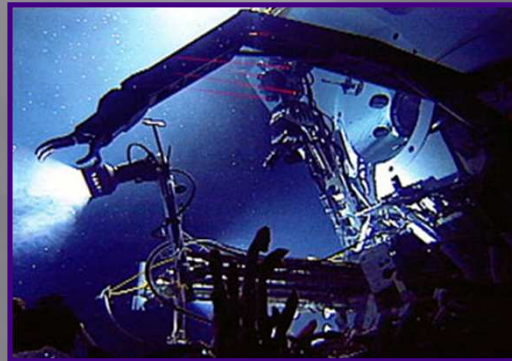


1980's – Robotic Advancements

- 1980's offered tremendous advancements in microelectronics and computing
- As a result, robotic telepresence technology began to reach new heights (and depths)



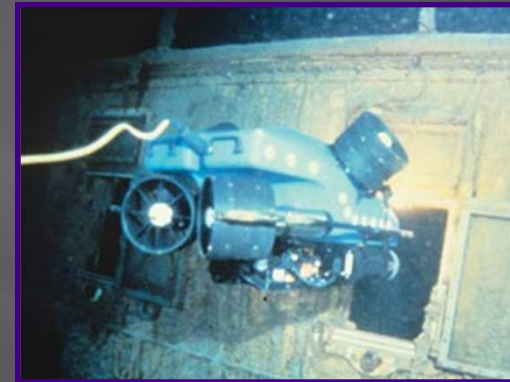
Nuclear material robotic arm ~ 1981



Deep Sea Robotics ~ 1985

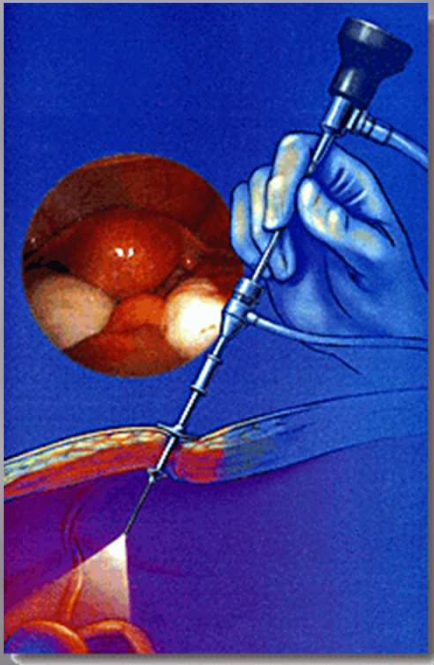


NASA Robotic Arm ~ 1981



Robot "Jason Jr." *Titanic* wreck ~ 1986

1980's – Introduction of Laparoscopy



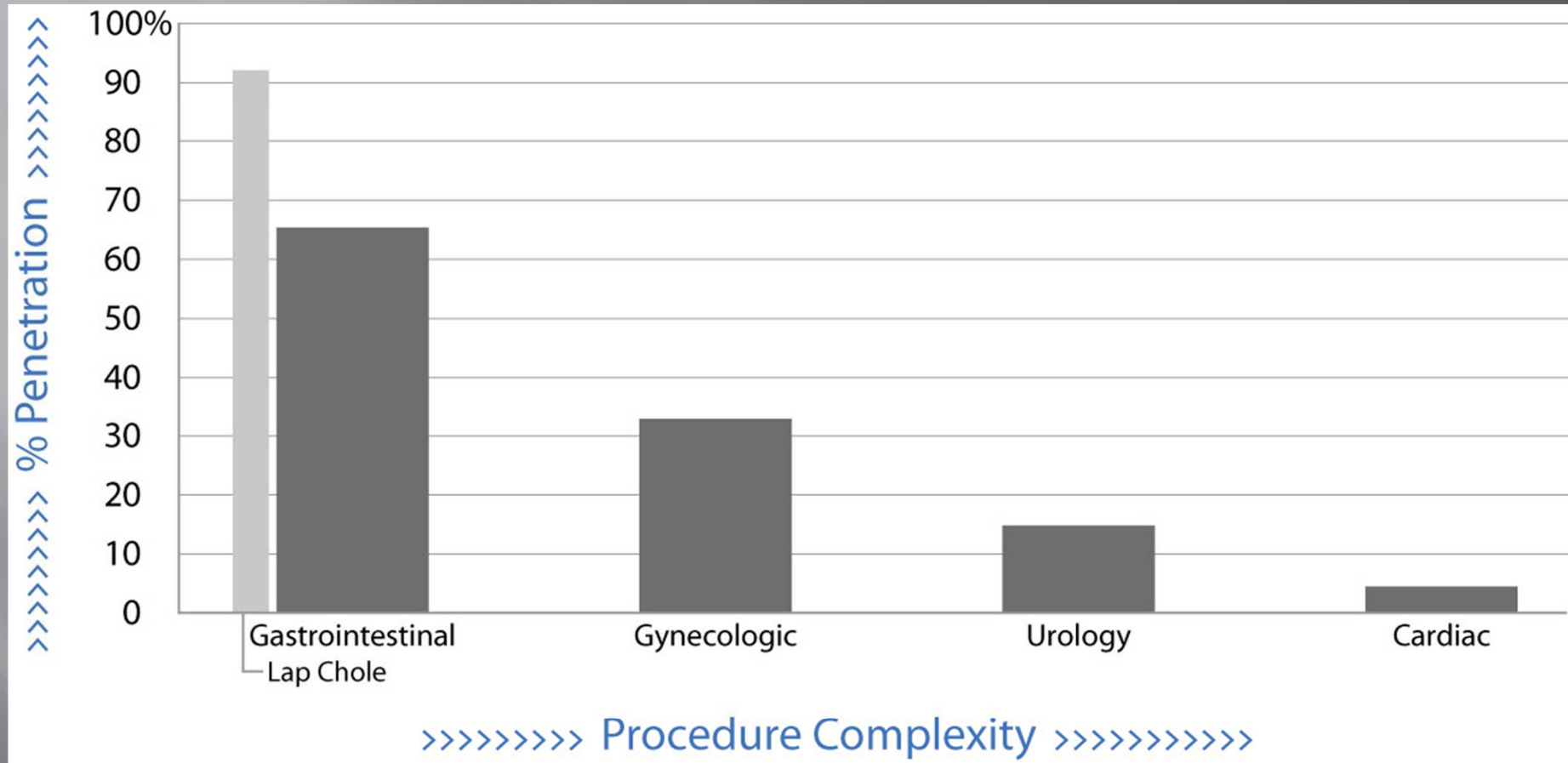
Laparoscopic oophorectomy (removal of the ovaries) – early 1980'S



Dr. Philippe Mouret ~ 1987

*Credited with first lap chole
Procedure in France in 1987*

Laparoscopy reaches limitations...



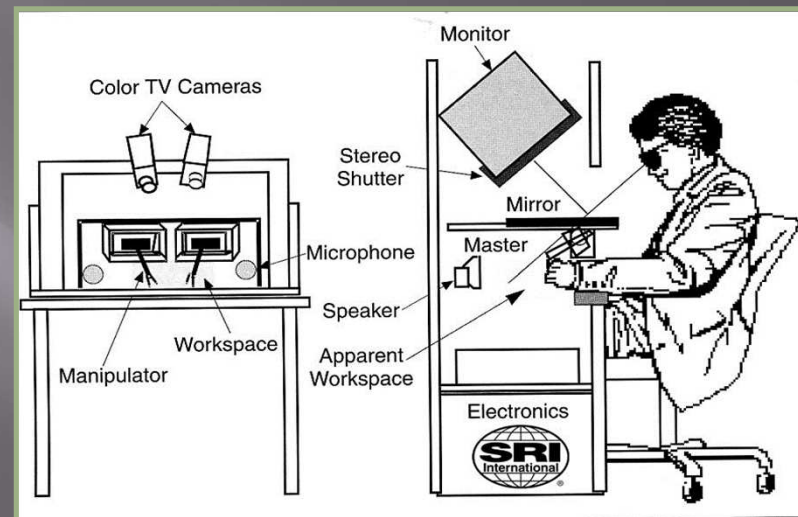
Technical Concepts

Robotic Surgery



- Pre-programmed movements
- Fast, repetitive, accurate
- Dumb

Computer-enhanced Surgery



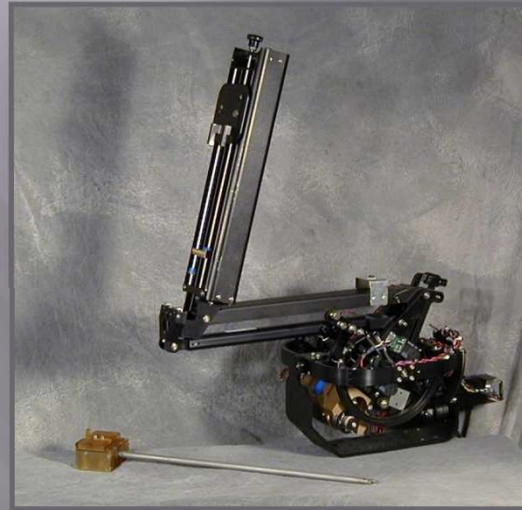
- Real time control through surgeon
- No automated manipulation
- Flexible - using human intelligence
- Master-slave relation
- Form of tele-presence

Experiments with Enhanced Telesurgery

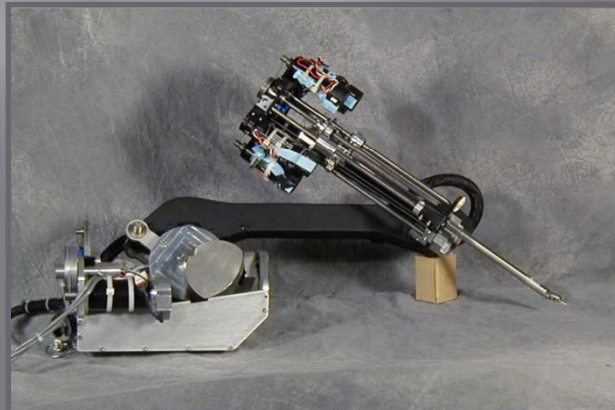


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Evolution of the Patient Side Manipulator



"Mona" - 1997



"Lenny" - 1996

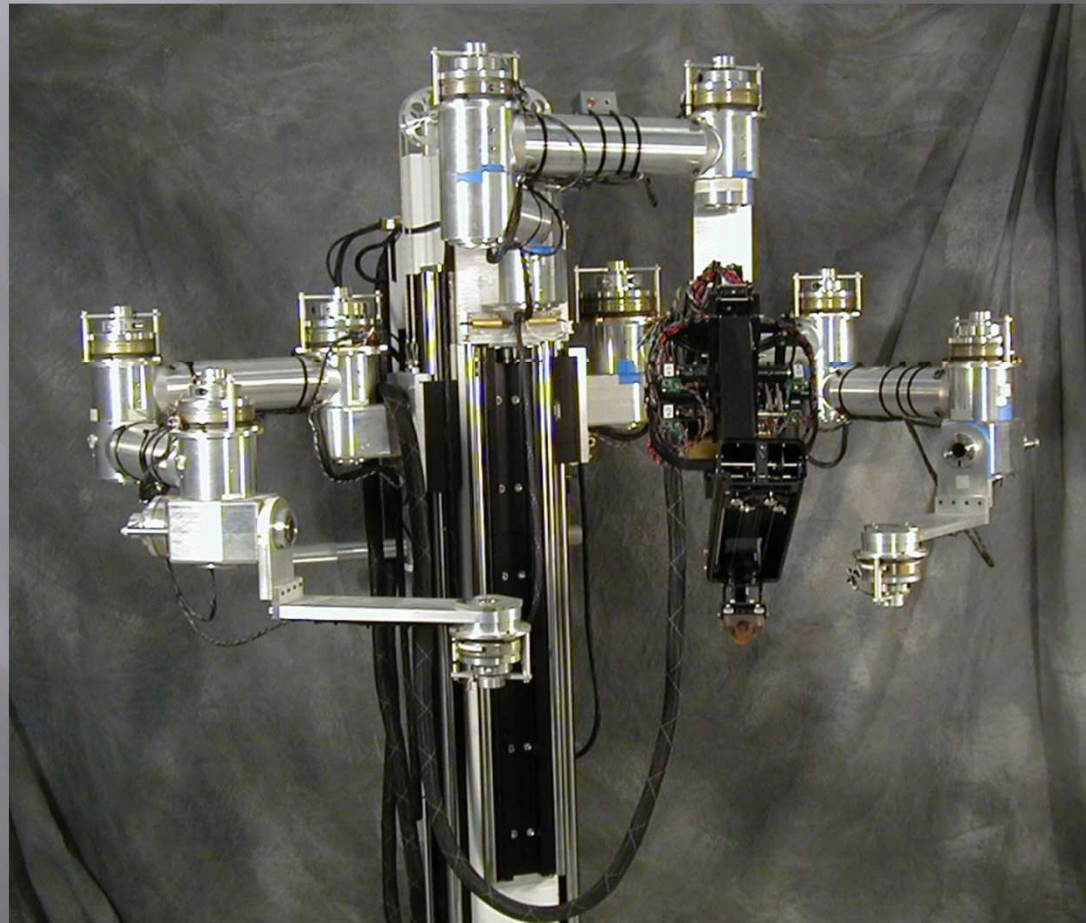


da Vinci - 1998



da Vinci S / Si - 2009

1997 - First da Vinci was born



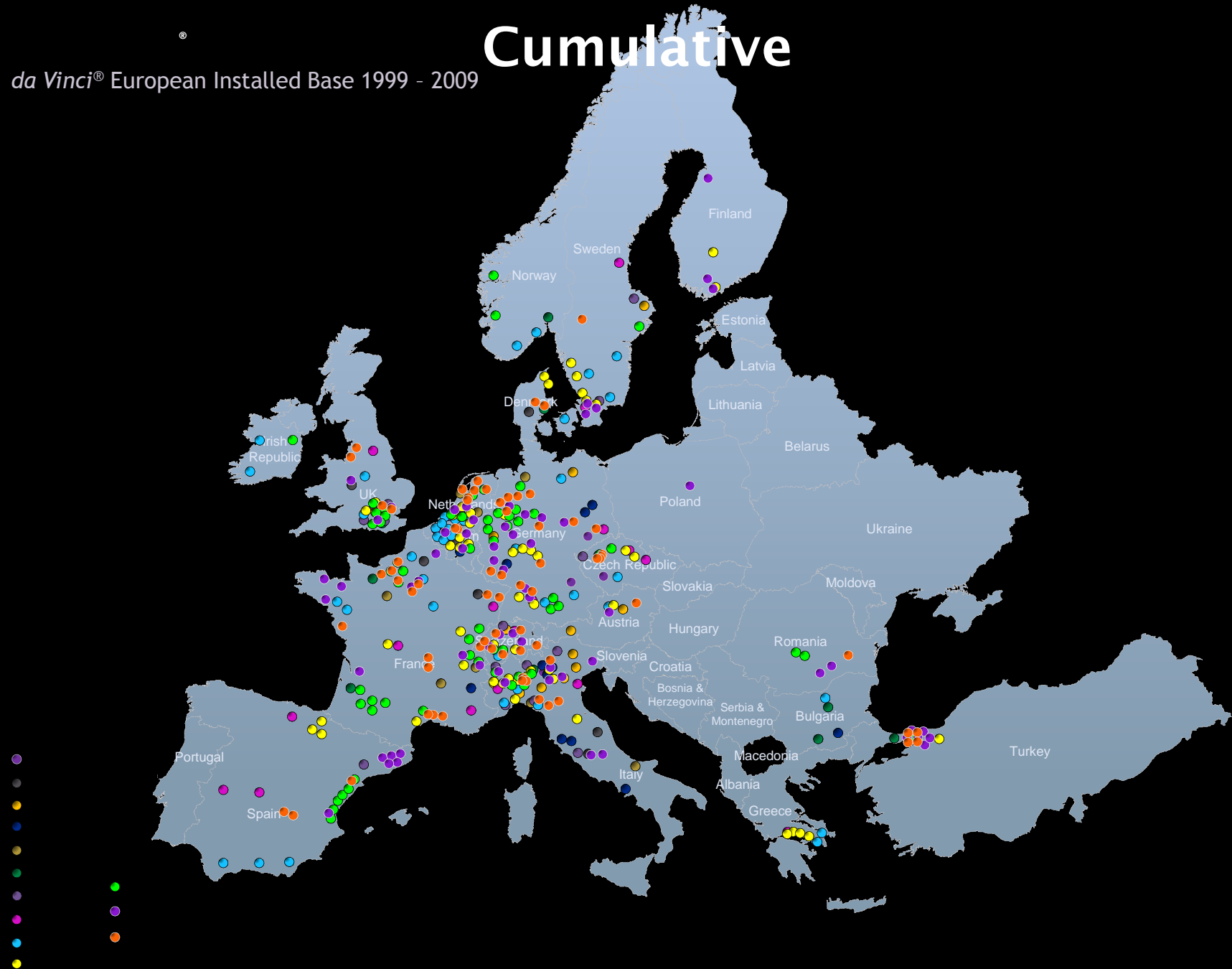
2000 - First *da Vinci*[®] Prostatectomy performed in the world

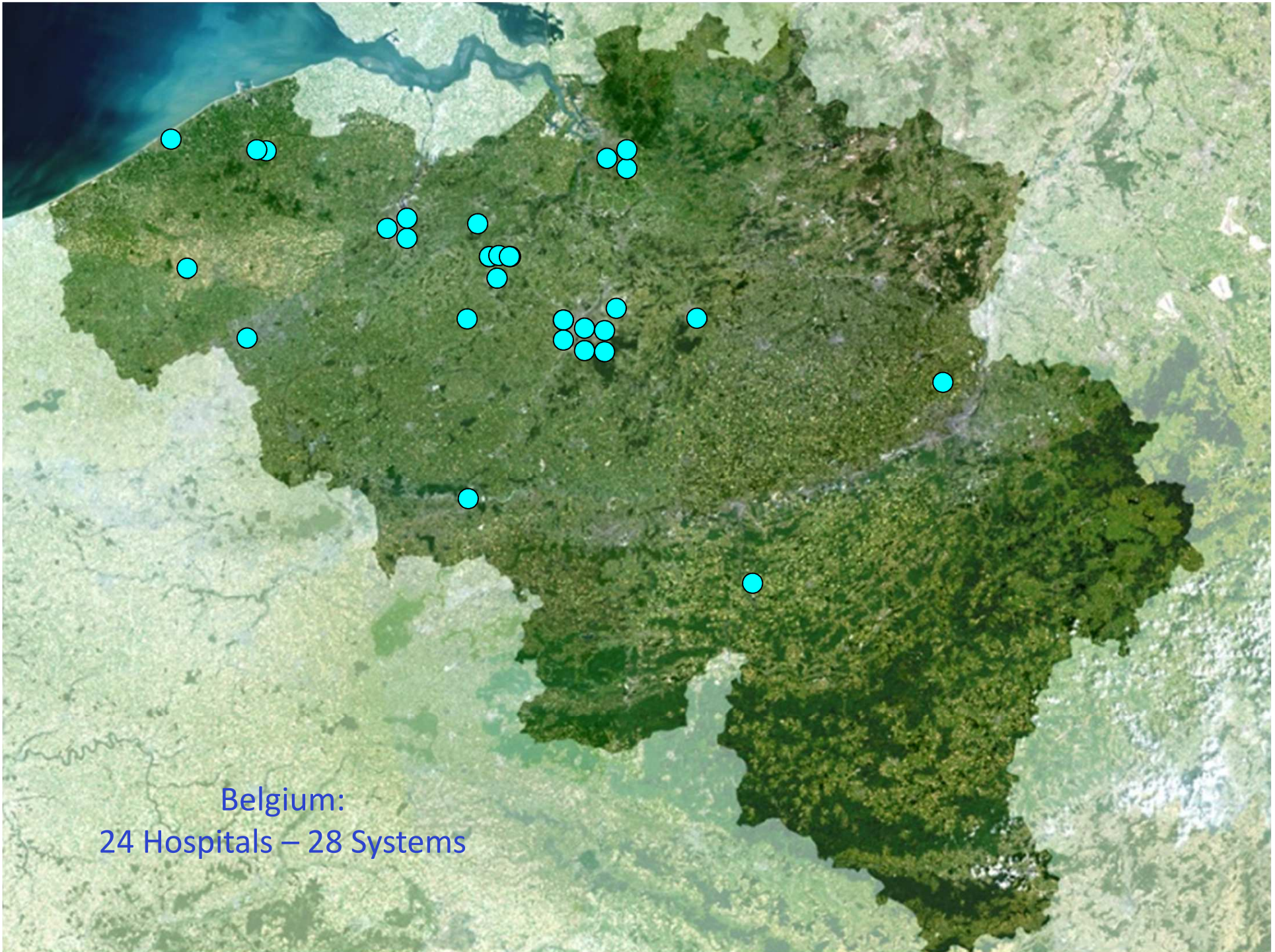


Dr. Jochen Binder Frankfurt University Hospital May 23, 2000

da Vinci® European Installed Base 1999 - 2009

Cumulative





Belgium:
24 Hospitals – 28 Systems