Sunrise
BUSINESS

nanoflex robotics

SCION
ELEVATING SECURE COMMUNICATION

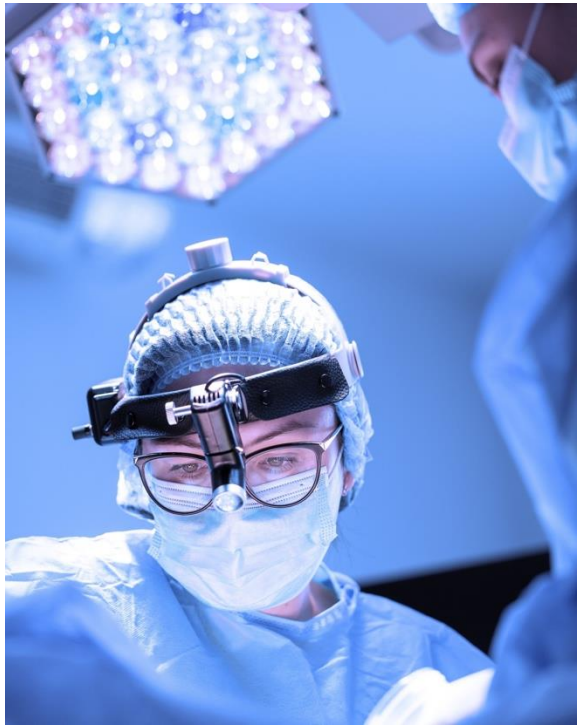
From vision to reality: Securing remote robotic surgery with 5G and SCION

- Eliseo Rodriguez, Head of Connectivity & Data, Sunrise Business
- Dr. Christophe Chautems, CTO and Co-Founder, Nanoflex Robotics AG

Nanoflex Robotics AG – award-winning MedTech pioneer

- A medtech spin-off from ETH Zurich
- Founded in 2021
- Recognized with multiple awards:
    - Winner of the ZKB Pionierpreis Technopark 2025
    - Winner of the TOP 100 Swiss Startup Award 2024 and 2025
    - Winner of the Falling Walls Venture global competition

Transforming Healthcare: Remote Robotic Surgery

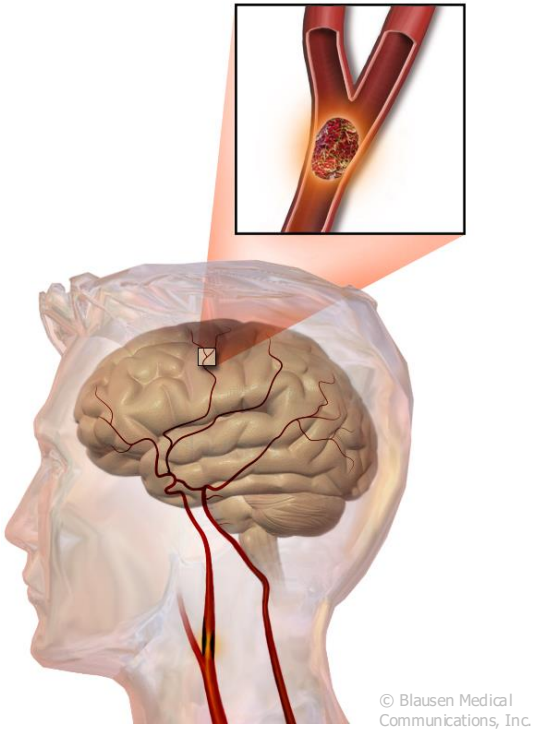


We are building next-generation telerobotic solution to enhance access to life-saving procedures.

Our magnetic technology and ultra-flexible robotic devices empower physicians, and seeks to enable faster, safer and more precise interventions.

Telerobotics for Time-Critical Procedures

Stroke Treatment is Highly Time-Dependent



Time is Brain
For Large Vessel Occlusions (Acute Ischemic Stroke)

Time to Reperfusion	Recovery Chances without Serious Disability
2 h	75 %
8 h	< 10 %

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Remote Surgery Evolution

Lindbergh Operation - New York - Strasbourg, high-speed fiberoptic service, 2001

5G Remote Robot-Assisted Hepatobiliary and Pancreatic Surgery, 2022

World's First Remote Operation Using 5G Surgery in animals, 2023

Lifesaving telesurgery in the age of 5G - Florida to Dubai, 2024

5G Mobile Networking options

Mobile Internet via 5G

Mobile Private Network Slicing

Hybrid Mobile Private Networks

Mobile Private Network Campus

Health Ecosystem is @ risk

Secure Swiss Health Network (SSHN) – SCION enabled network for the medical community

The SSHN defends critical applications and environments against DDoS and routing attacks, safeguarding secure communication.

The SSHN enables swift failover response to connection failures, maintaining seamless workflow continuity.

The SSHN effortlessly meets stringent data protection requirements through geofencing and path optimization.

Concrete Nanoflex Use Case

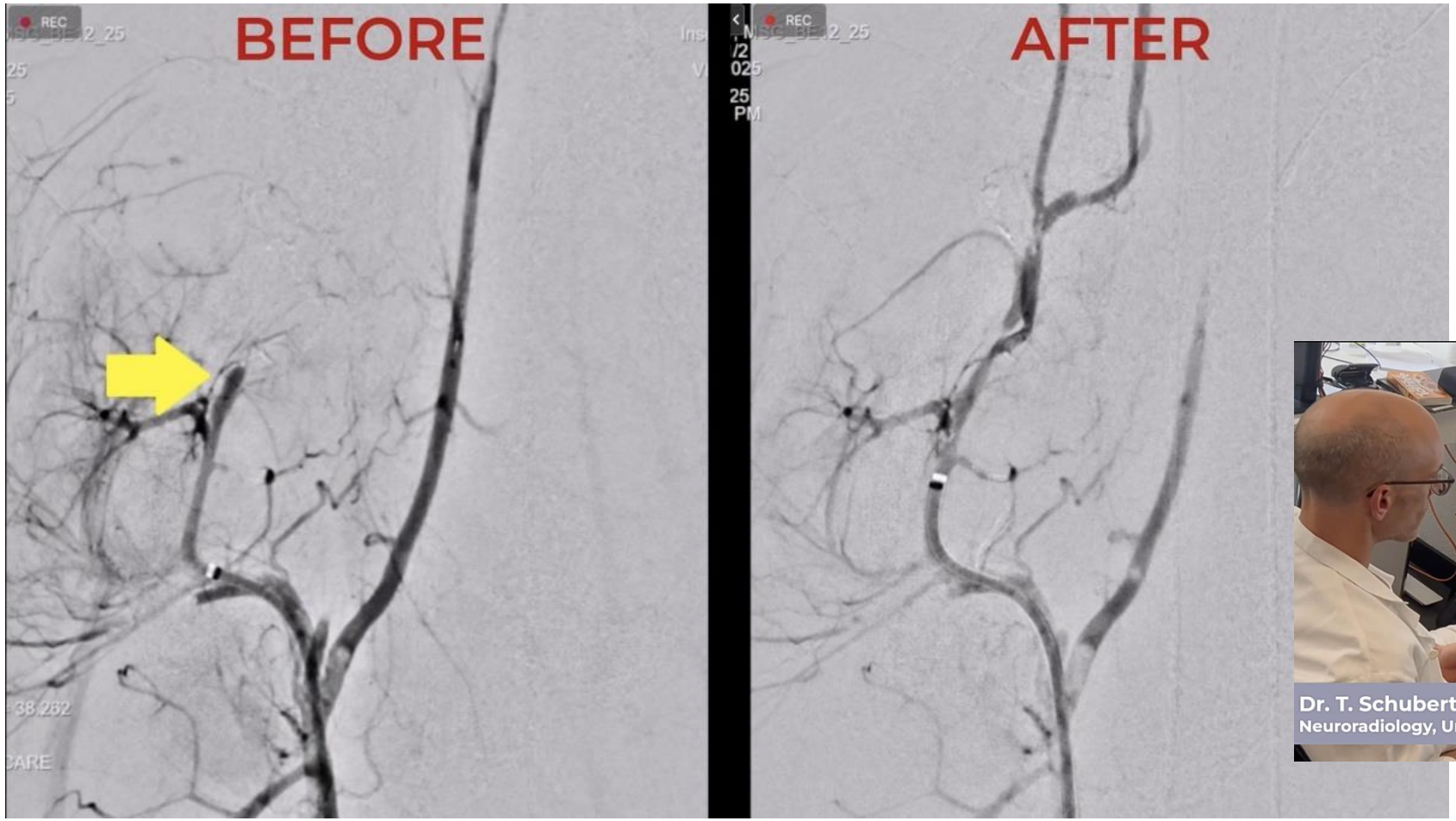
Ensuring dependable connectivity for our robotics system in the animal lab located in Bern and Zurich, as well as for teleoperation from the clinician's office.

Use those experiment as proof of concept to demonstrate the feasibility of teleoperation and validate the connectivity.

Teleoperated thrombectomy in vivo (Zurich-Bern + Arizona-Bern)

May 2025
Nanoflex Robotics

Results And Next Steps



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Thank you for your attention.

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