ZAP-X®
GYROSCOPIC RADIOSURGERY™ PLATFORM

ScandiNova Users Meeting
April 2023

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- ZAP-X System
- Linear Accelerator Subsystem
    - Powered by ScandiNova Solid State Modulator

Background

Radiosurgery

- **Radiosurgery is high-precision, high-dose radiotherapy**
  - Rather than relying on radiobiology to kill fast multiplying cancer cells while sparing healthy tissue (i.e. deliver the radiation slowly over several weeks), radiosurgery delivers higher doses in 1-5 sessions (called “fractions”) to kill all the cells within a target volume.
  - To achieve this, radiosurgery systems need to be more precise than general radiotherapy systems
  - Most common use is brain cancer
    - Metastases, glioblastoma, neuromas, etc
  - Also used in benign (non-cancerous) tumors and some functional areas
    - Mengingiomas
    - Trigeminal Neuralgia

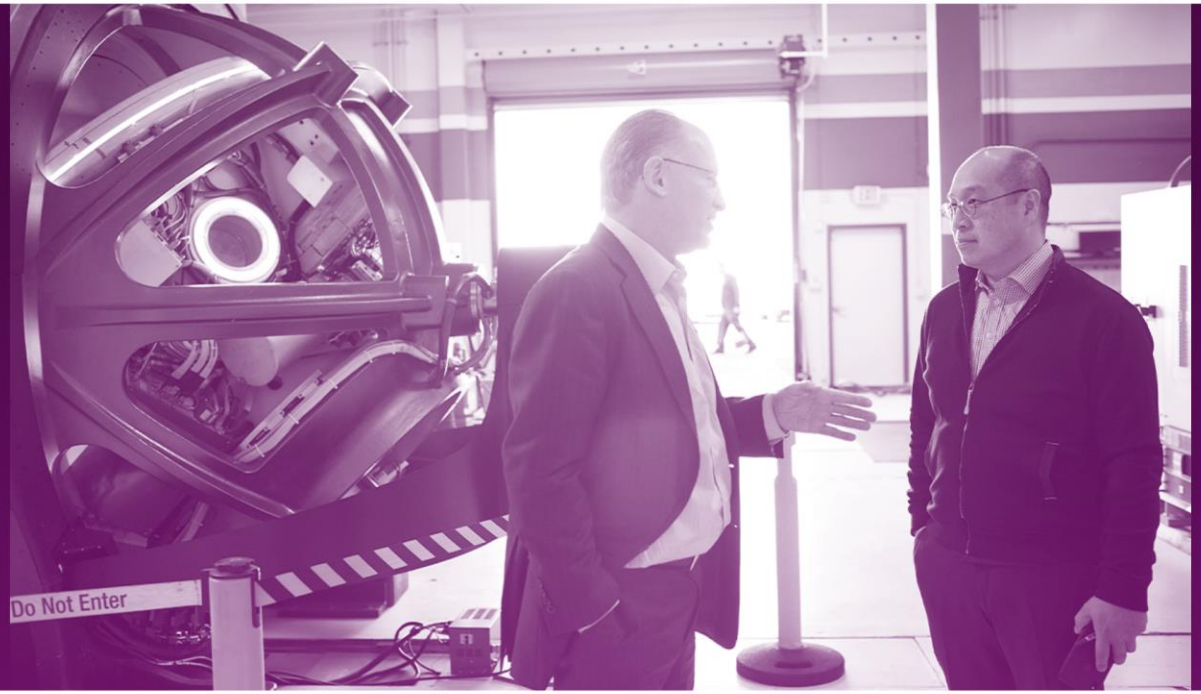
Predicate Systems

- **Gamma Knife**
  - “Frame” is attached to skull with screws
  - Radiation is delivered from 196 Cobalt sources
- **CyberKnife**
  - Linear Accelerator on a 6-axis industrial robot
- **Varian/Elekta Linear Accelerator with Add-On Tracking Systems**
  - Varian Edge

ZAP SURGICAL SYSTEMS, INC.

- **Founded in 2014 by John Adler, M.D.**
  - Professor of Neurosurgery & Radiation Oncology, Stanford University
  - Inventor of the CyberKnife®
  - Founder of Accuray
  - Former CMO of Varian
- **Headquartered in Silicon Valley, CA**

ABOUT ZAP SURGICAL



THE PROBLEM

Every year more than 4 million brain tumor patients worldwide are potential candidates for stereotactic radiosurgery. Yet with the significant costs and complexities of historical SRS delivery, only 200,000 patients receive such treatment.

OUR VISION

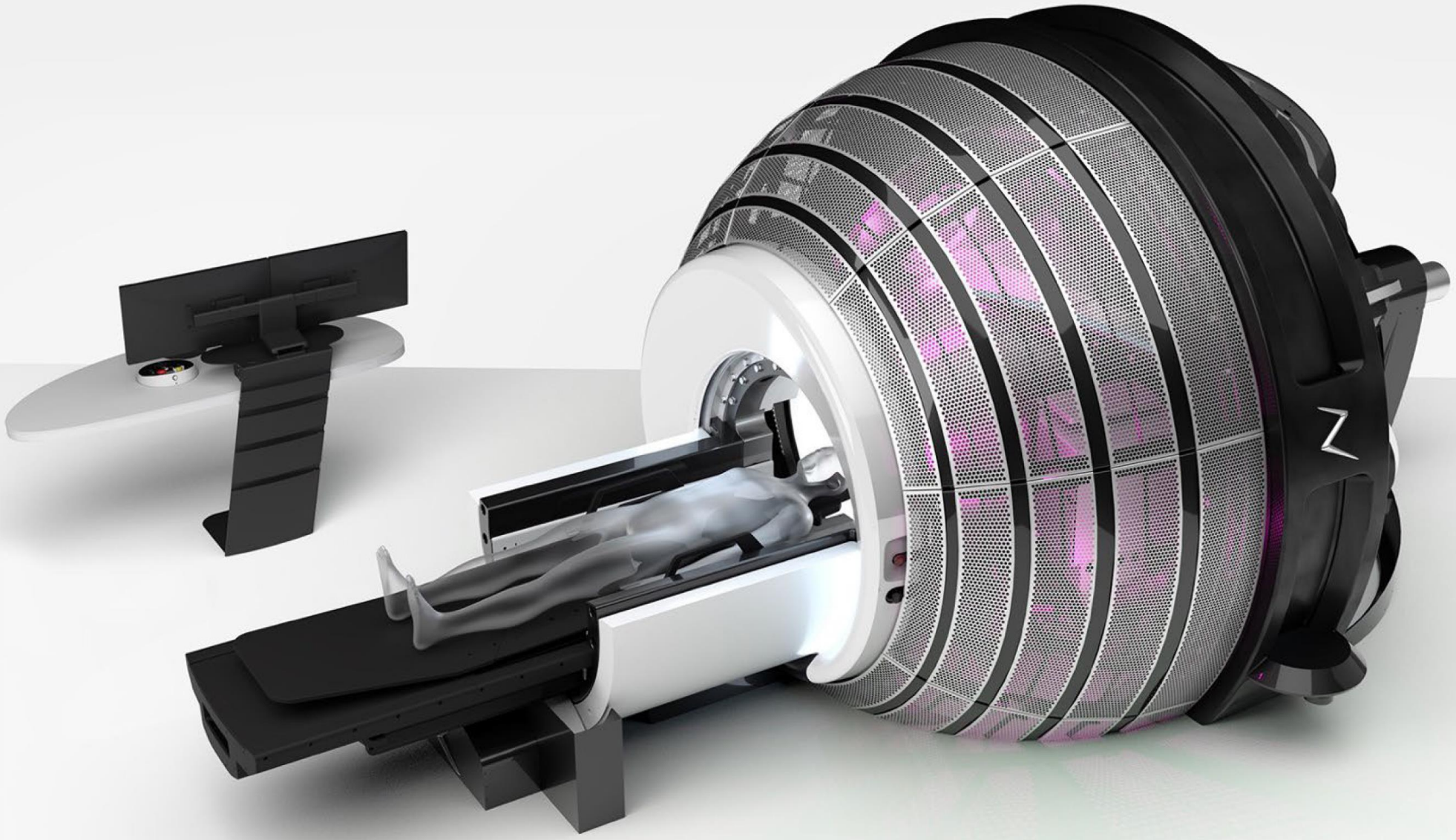
MAKE WORLD-CLASS SRS ACCESSIBLE TO THE MILLIONS WHO CURRENTLY LACK ACCESS.

ZAP-X® GYROSCOPIC RADIOSURGERY

VAULT-FREE*

COBALT-FREE

SRS-OPTIMIZED



* Based on typical system use and patient volume. Weidlich G A., Schneider M, Adler J R. (December 06, 2017) Self-Shielding Analysis of the Zap-X System. Cureus 9(12): e1917. doi:10.7759/cureus.1917. Requirements may vary by country.

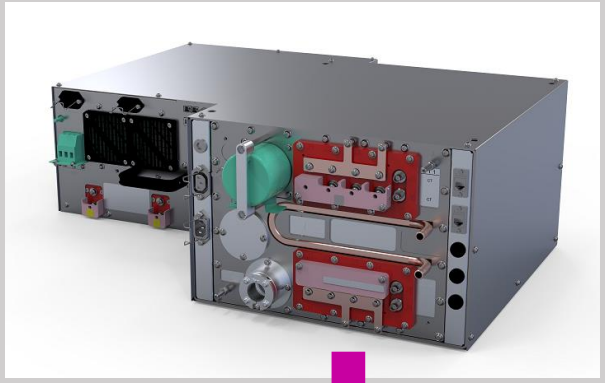
ZAP Surgical - Makers of the ZAP-X

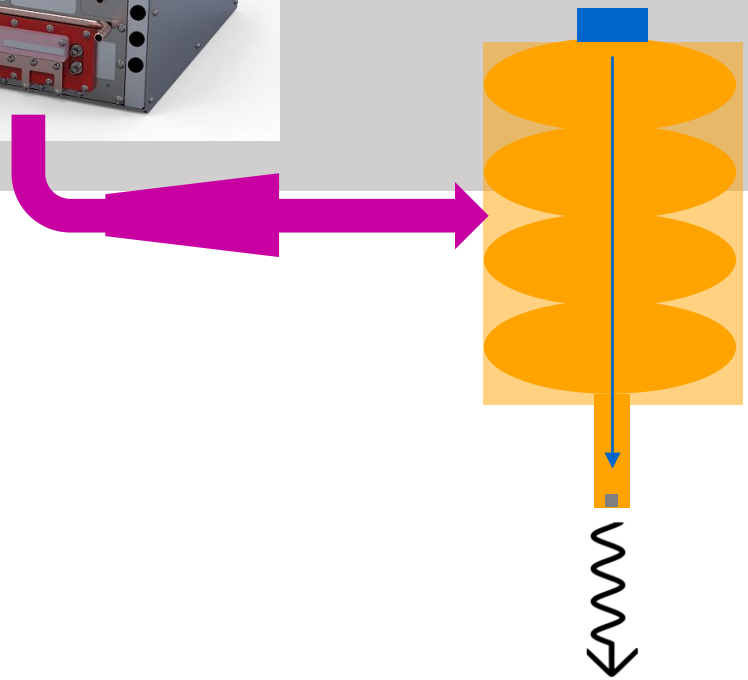
For video, visit https://zapsurgical.com/

ZAP-X PLATFORM COMPONENTS

ZAP-X Linear Accelerator

Linear Accelerator





- Electrons are created by an “electron gun”
- Microwaves are generated from a magnetron (driven by a Solid State Modulator)
- Accelerated electrons hit a target with an energy (“speed”) of 3 MeV
- As the electrons interact with the target they generate X-rays (Bremsstrahlung)
- X-rays are “shaped” (by blocking the unwanted rays with tungsten) and delivered to the patient

System Integration

ScandiNova M100i allows for Easy System Integration