Augmented
Surgery

When surgery, AI and AR unite!

PLAN

1. The Problem
2. Our Solution
3. Example: Spinal Cord Injury
4. AIoT Architecture
5. Features
6. Market Size
7. Inbound Marketing Strategy
8. Project Realization Strategy
9. Business Model
10. Financing
11. BMC

The Problem

The world health organization improve that every year there is 43 million medical errors which kill 400 000 people

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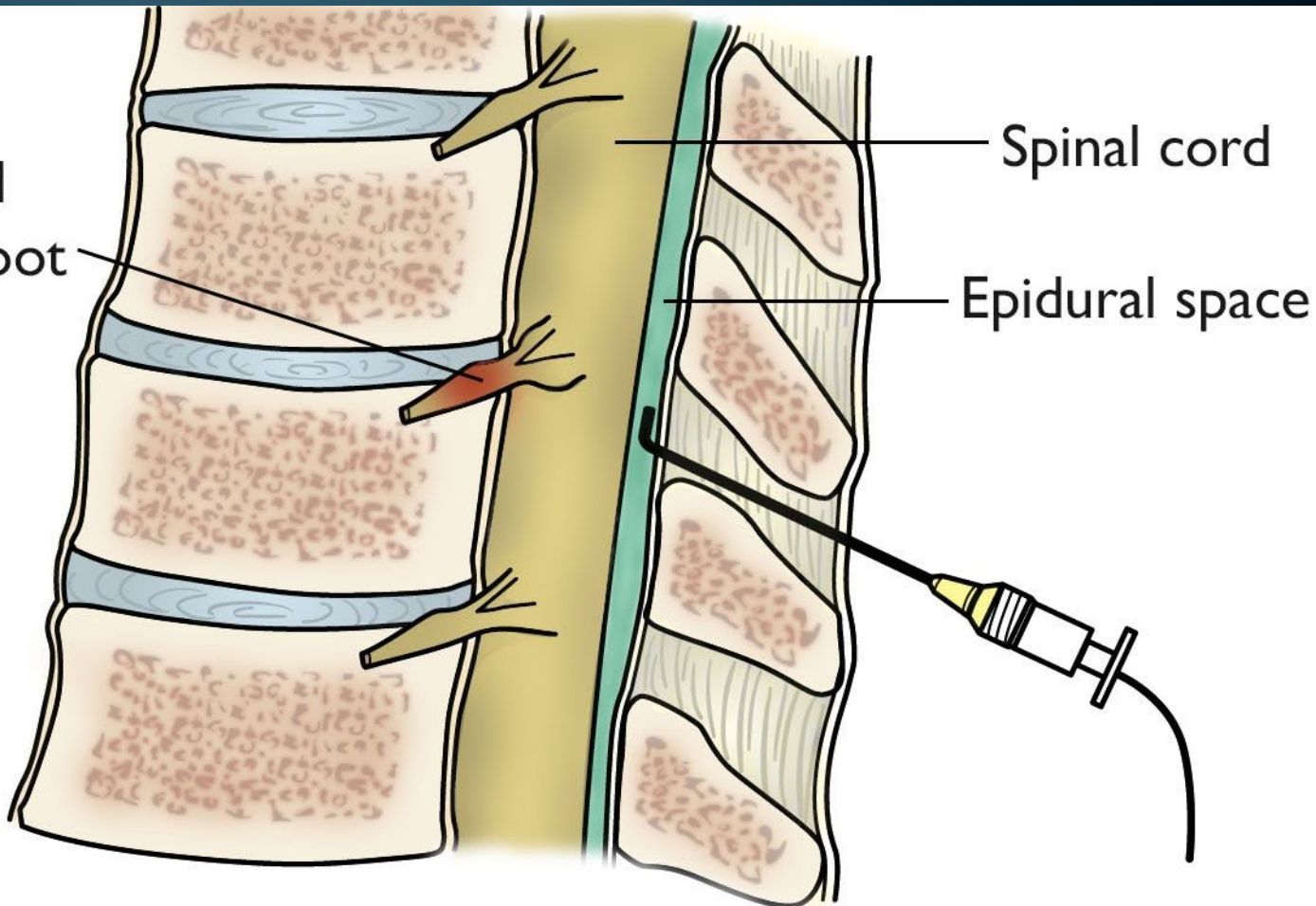# Our Solution

Real-time AI & AR-assisted Surgery

Augmented Reality Surgery is a real-time intraoperative AI to power a robust surgical toolkit, including surgical assistance in the Operating Room and surgeon feedback and analytics.
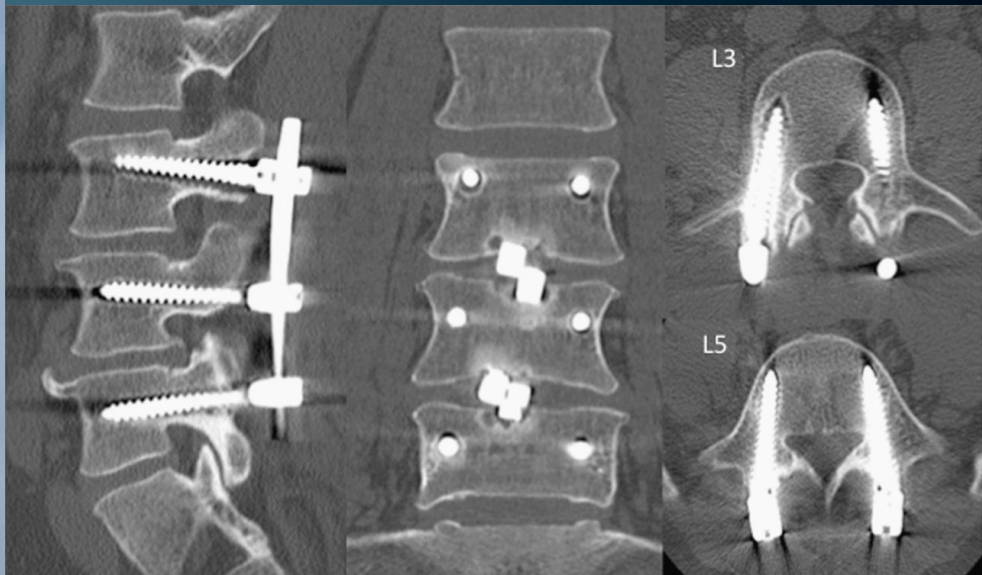
Example: Spinal Cord Surgery

Preemptive CT Scan

Inflamed nerve root

Spinal cord

Epidural space

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CT Real-time Scanner
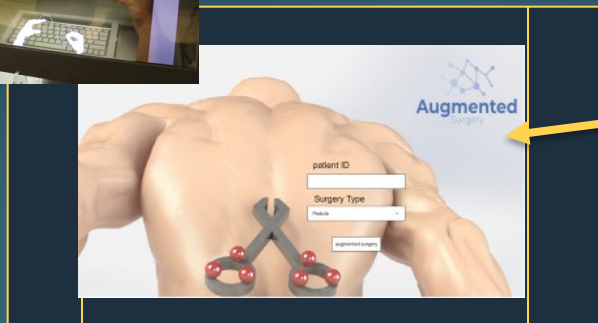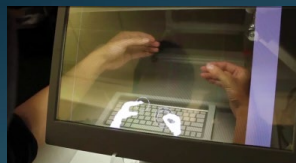(O-arm)

Cloud AI Server (NVIDIA)

Overhead light

V120: Trio Optical tracking system: Stereo camera

Projector Screen + Processing Unit

AR Optical See-through Holographic Display

The Prototype Platform

Stand

https://www.justinmind.com/usernote/tests/73
847986/73849238/73849240/index.html?fbcli
d=IwAR2iGvJIDxS6P-
HlKEIAs2Z9oIAZg3C_K56CZ4RFQEr7CbuF
wd-718CQLYs#/screens/d12245cc-1680-
458d-89dd-4f0d7fb22724

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AIoT Architecture
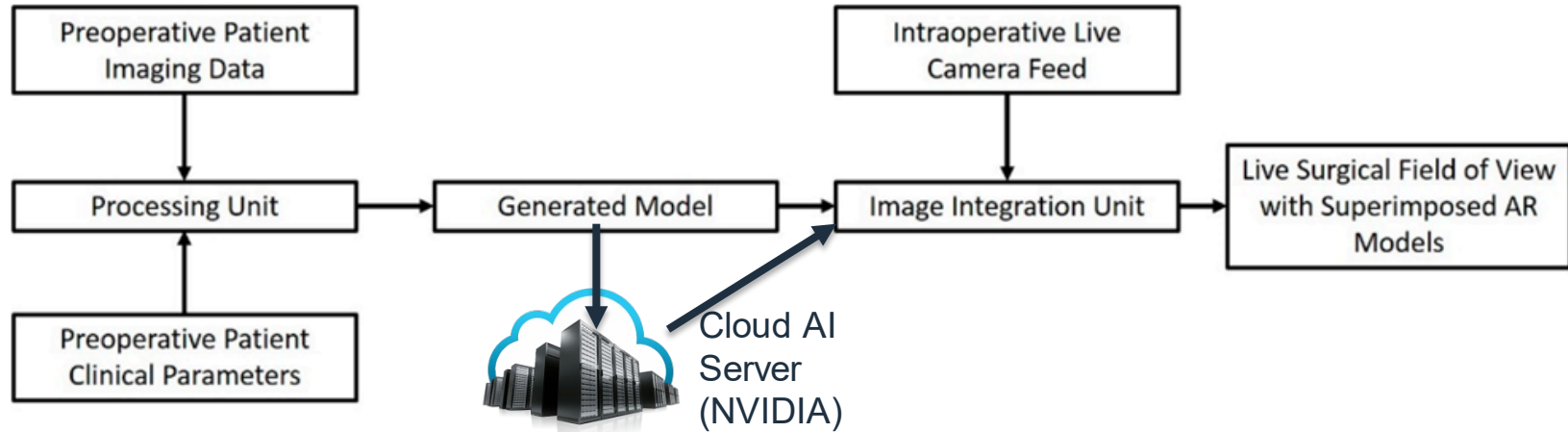
1- Creating a virtual 3D image of the patient's anatomy (ROI)
2- Image analysis, processing and anatomy segmentation
3- Diagnostic, preoperative planning, surgical simulation
4- Surgical navigation assistance

Features

Autonomous Anatomy Segmentation

CNN segmentation of patient anatomy based on intraoperative 3D imaging.
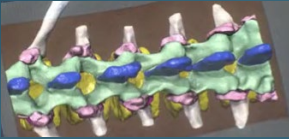
Augmented Reality Guidance

3D trajectory and targeting are superimposed on surgical instruments in real time

Automatic Intraoperative Surgical Plan

Suggests a surgical plan that eliminates time spent manually planning tasks and choosing tools

PLAN			
T1	Screw	Diameter (mm)	Length (mm)
	Right	5.5	40
T2	Left	6.2	50

Extra Features

- AI that tells surgeons to avoid areas near blood vessels
- Shows how thousands of previous sucessful surgeons traversed the anatomy and where they intervened.
- Another programme calculates the tissue's resilience and suggests alternatives if necessary

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Market size

$14.75 billion

$200 Million

$2.4 Million

TAM

SAM

SOM
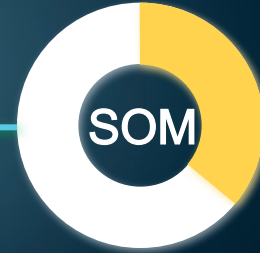
The global general surgery devices market size (2021)

Presence in the Medical Disposables in Tunisia (2022)

Per year market obtainable revenue in 2021

Inbound Marketing Strategy

Online
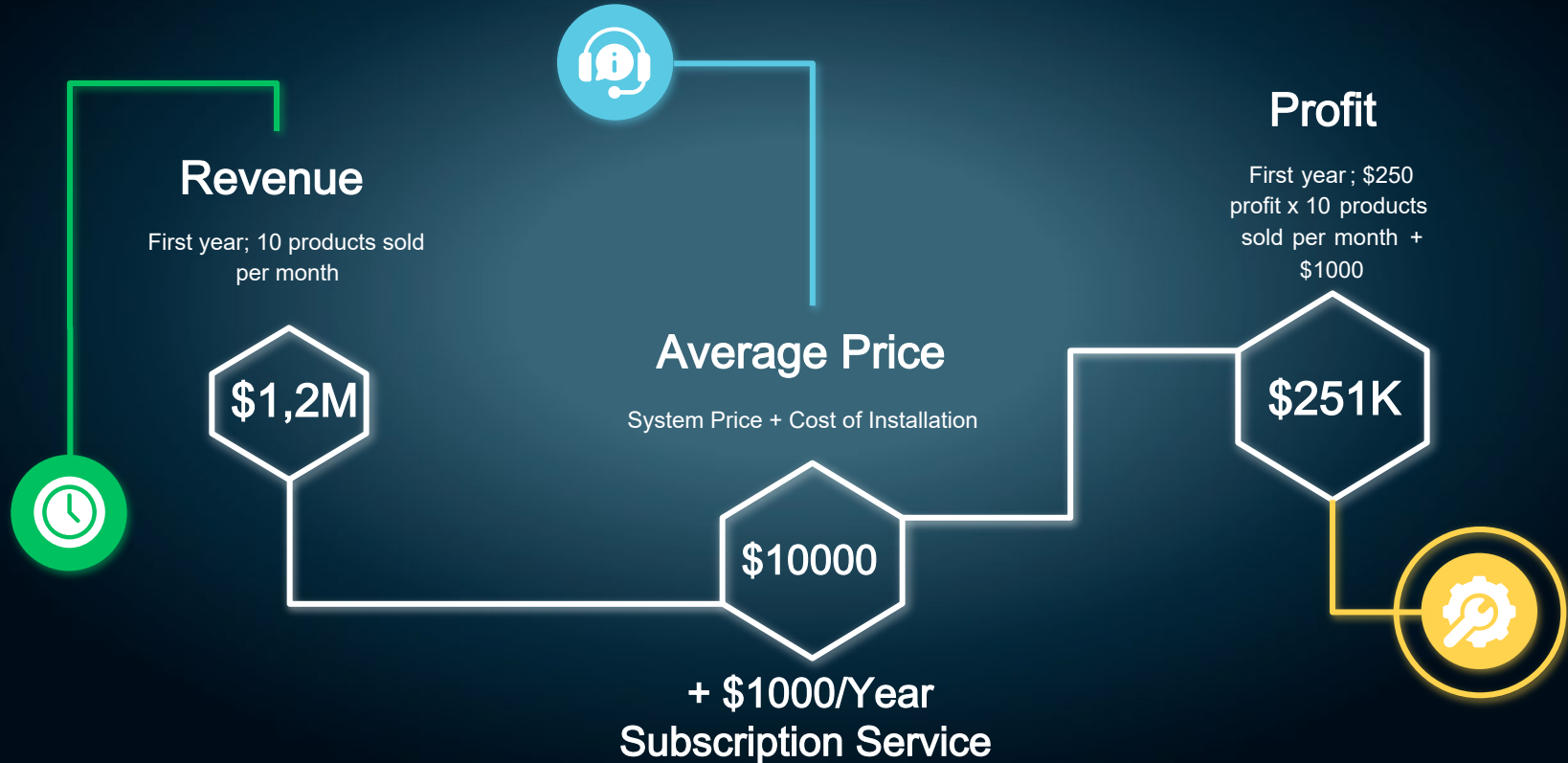Webinars, Social media, Videos, White Papers

PR
Campaigns

Advertising
Broadcasts, Billboards, Newspaper, Brochures

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Financing

Investors

01

Incubators

02

Accelerators

03

Business Angels

04

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Project Realization Strategy

01 Concept Studies
Produce a broad spectrum of ideas and alternative concepts.

02 Technology Development
Determine the feasibility and desirability of a suggested new major system.

03 Preliminary Design and Technology Completion
Define the project in enough detail at all levels

04 Final Design and Fabrication
Complete a detailed final design of hardware and software

05 System Assembly, Integration, Test and Launch
- Assemble system components
- Test the system to meet requirements
- Launch the system.

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Business Model

Revenue

First year; 10 products sold per month

$1,2M

Average Price

System Price + Cost of Installation

$10000

+ $1000/Year
Subscription Service

Profit

First year ; $250 profit x 10 products sold per month + $1000

$251K

Business Model Canvas

Key Partner	Key Activities	Value Proposition	Customer Relationships	Customer Segments
• Doctors • Insurance company • Communication agency • Suppliers	• Finding investors • Product development /production • Testing and collecting doctor/patients feedback	Surgery risk reduction Elimination of time spent manually to plan trajectories and measurements Suppliers: Giving attention to their products and gaining them new clients Surgery assistance/ guidance	• • Doctors direct contact	Hospital and clinic Surgical doctors who works for their own

Key Resource

• Founding Team/ scientific knowledge

Channels

- Platform
- Social media (Facebook/Instagram)
- Influencers
- Urban display
- Media
- Events.
- Through doctors experience

Cost Structure	Revenue Streams
• Salaries • Hardware budget • AR interface / Platform / database development	Suppliers Advertisement Rent/sale of the technology

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Reach out to us for more!

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