



STATIONARY ANGIOGRAPHIC SYSTEMS **VS** MOBILE C-ARMS:

What is offering the technology today ?
What can we expect for the future ?



STATIONARY

**The object
of desires?**



MAIN BENEFITS

A photograph of a modern operating room. In the center is a surgical table covered with a white sheet. Above the table are several large, adjustable surgical lamps. To the right, there are multiple monitors displaying medical data. The room is brightly lit and appears clean and professional.

Glamour

Reliability

3D skill

Fusion



SOME DISADVANTAGES

Purchase and Organization Cost

Management and Maintenance costs

Huge rooms are required

Many works for rooms preparation



In the PAST

BIG difference between these
TWO kinds of devices:

- **Stationary** (100 kW)

- **C-arms** (2-5 kW, manual, I.I. based, no cooling:
used just in General Surgery or entry Orthopedics)





NOW

the C-arms have evolved:

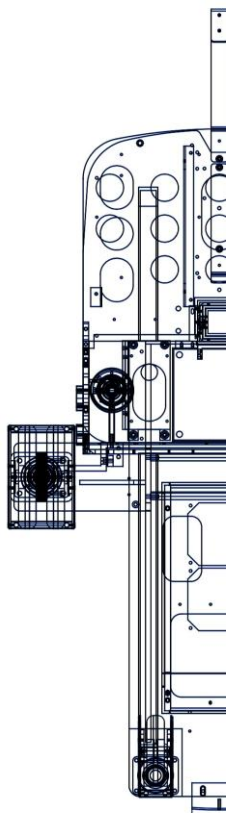
- 20 kW or more power generators
- FPD detectors
- Motorized and/or Manual movements
- Higher housing dissipation
- X-Ray tube anode capacity ≥ 300 kHU
- DSA

A photograph of three surgeons in an operating room, wearing blue scrubs, masks, and caps. They are focused on a patient lying on the table. The room is dimly lit, with bright surgical lights overhead. Medical monitors are visible in the background.

So they may perform **Vascular/Endovascular**
procedures also

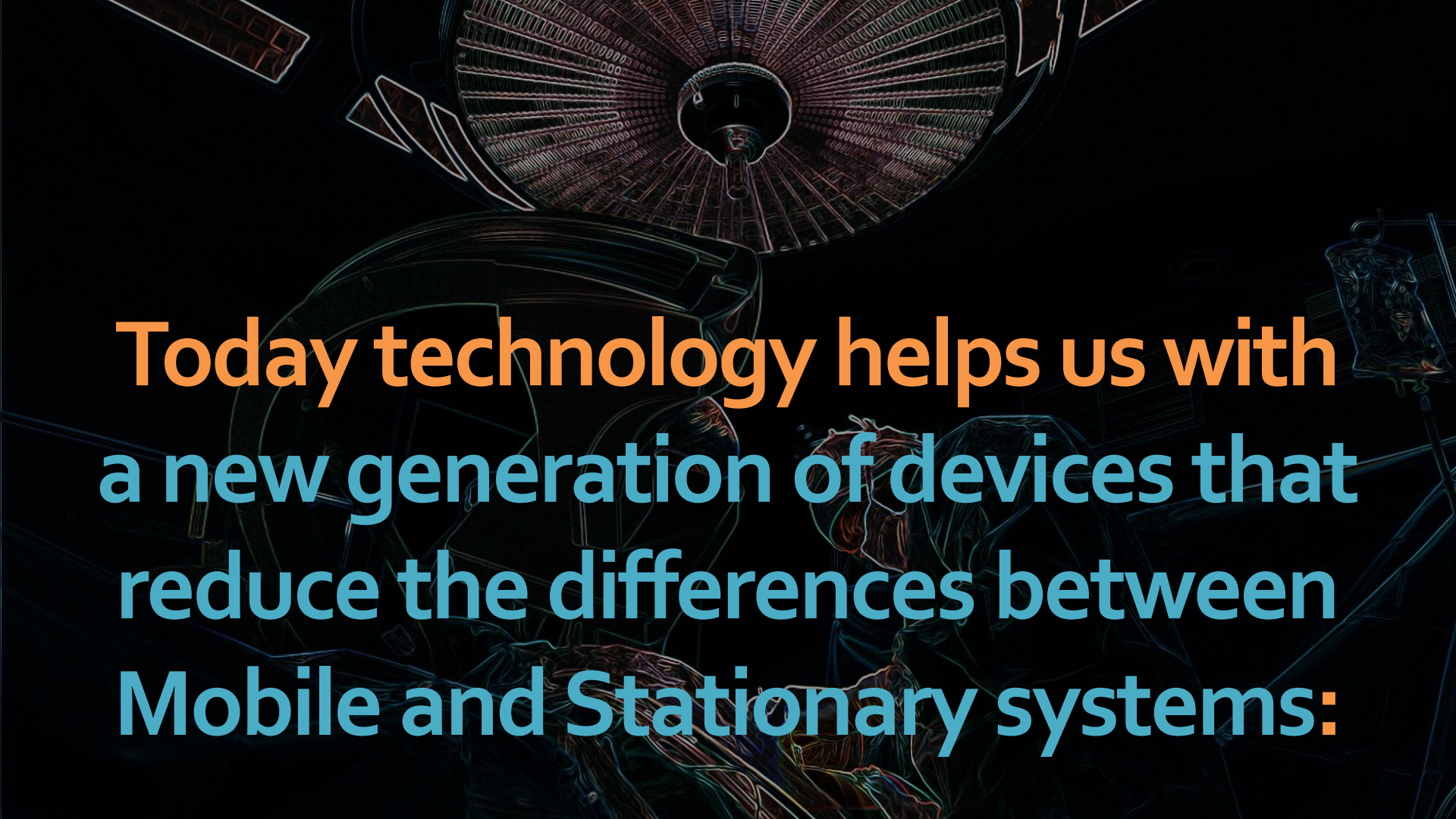
A blurred photograph of a surgical team in an operating room. The surgeons are wearing blue scrubs, masks, and caps. The scene is dimly lit, with a bright light source visible in the background. The overall tone is professional and focused.

BUT...



THE RISKS COULD BE:

- The system is under **high stress**
- X-Ray tube **life** could be short
- Failure or damaging could be frequent
- Often the **quality** could be inferior



Today technology helps us with a new generation of devices that reduce the differences between Mobile and Stationary systems:

A low-angle shot of a surgeon in a mobile cath lab. The surgeon is wearing a blue surgical cap, a white face mask, and blue scrubs. They are leaning over a patient who is lying on a table, performing a procedure. A large, circular surgical light fixture is positioned above the patient, casting a bright light. The background shows a clean, clinical environment with a white wall and a vent. An IV drip is visible on the right side of the frame.

The **MOBILE CATH LAB**

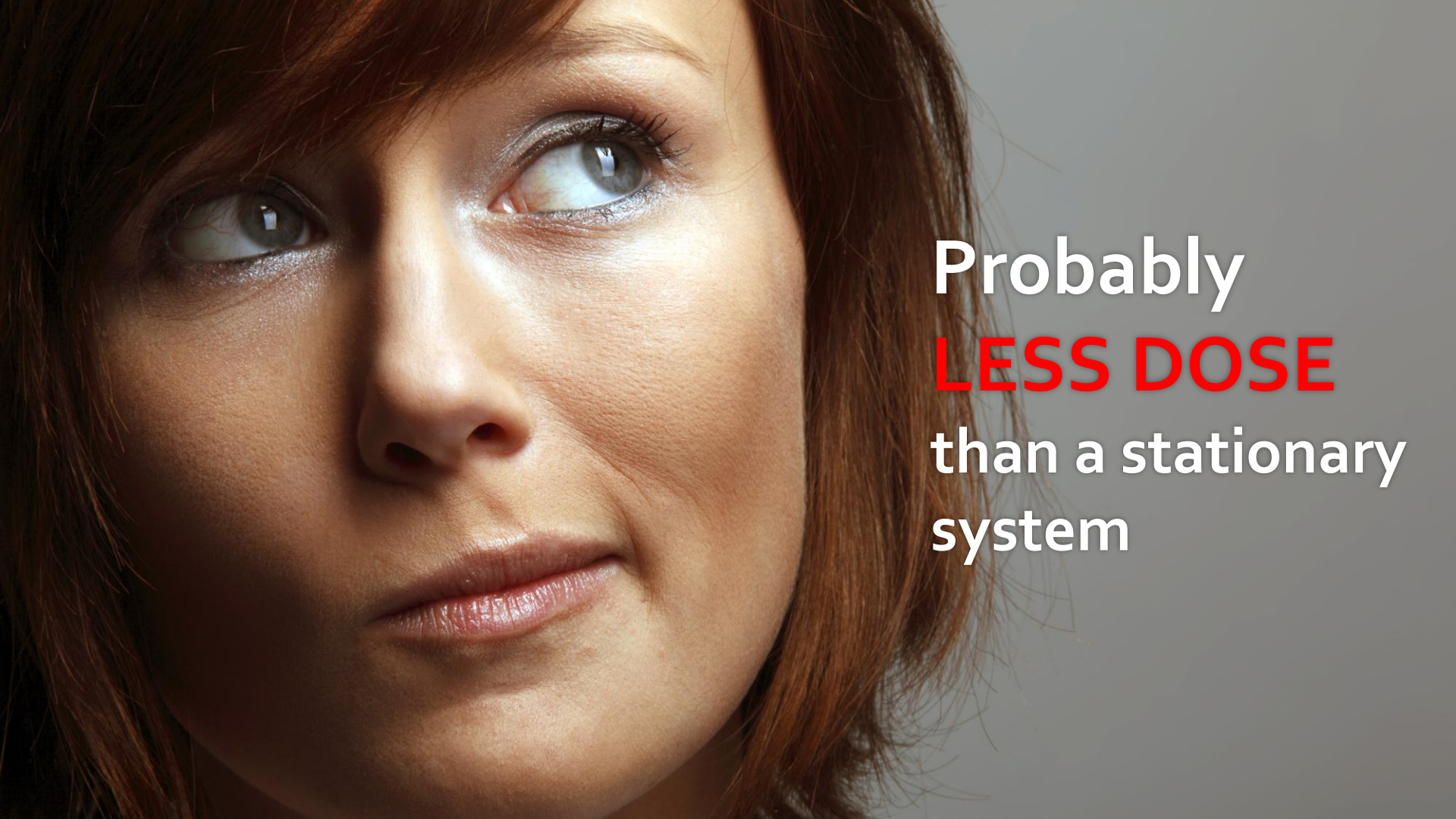
80 kW Three Phase Generator
It is mobile system, but...



The same **image quality** of a stationary system

A man in a dark suit and light blue tie is pointing his right index finger towards a glowing blue line graph. The graph starts from the bottom left, moves up, then right, then up again, and finally right with an arrowhead pointing towards the top right. The background is a blurred office setting with people and buildings.

The same **WORKING LOAD**



Probably
LESS DOSE
than a stationary
system



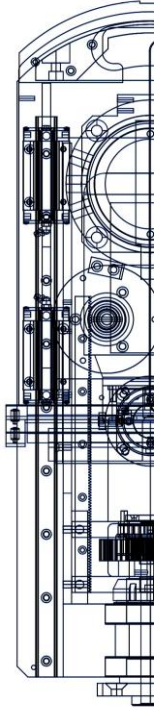
BENEFITS

No particular masonry required (for the ceiling only)

No huge room required

Lower purchase, management and maintenance costs

Very high level imaging software (even if on a mobile system)



MAIN FEATURES:

- To have **Isocentric C arm**
- To have **Motorized C movements**
- **Anode Capacity ≥ 800 kHU**
- **High level water cooling**





MOBILE CATH LABS

can be configured as Stationary systems







**Also a 25 kW system could
perform the same procedures?**



The background of the slide features a close-up, high-angle view of several interlocking white plastic gears. The gears are arranged in a circular pattern, with one gear in the foreground being the most prominent. The lighting creates soft shadows and highlights the texture of the plastic.

ONLY IF it is configured as **MOBILE CATH LAB:**

- Isocentric
- Motorized
- Anode Capacity at least 600 kHU
- High level water cooling
- Variable SID



CONCLUSION



Stationary

100 kW

Cath Labs Mobile

80 kW

Top C-arms Mobile

25 kW

DIFFERENCE

Mobile Cath Lab 80 kW **Vs** Mobile C arm 25 kW



| | Mobile Cath lab | Mobile C arm produced only for cardio vascular procedures | Mobile C arm by other brands |
|--|------------------------------|---|------------------------------|
| Power | 80 kW | 25 kW | 25 kW |
| Anode capacity | 857,000 HU | 600,000 HU | 365,000 HU |
| Anode dissipation | 174 kHU/min | 154 kHU/min | 91 kHU/min |
| Geometry isocentric moving only one axis | Yes | Yes | No |
| Depth of C arm | 75 or more | 75 or more | 68 to 73 cm |
| Variable SID as stationary systems | Yes | Yes | no |
| Power line | 3 Phase as stationary system | Monophase | Monophase |

Make it sense the
3D reconstruction
on a Mobile C arm ?



Is it only a commercial **toy**
?



What could be really **useful**?

FUSION

integrated in the C arm software





Why integrated?

(no external workstation)

- New CE-FDA regulations about video signal transfer between two different devices
- Another trolley inside the Operating Room
- Always less space

Operating Rooms with FUSION





WHAT ARE THE WEAK POINT
TO USE FUSION ON A MOBILE?

BARCO

ALIGNMENT SPEED

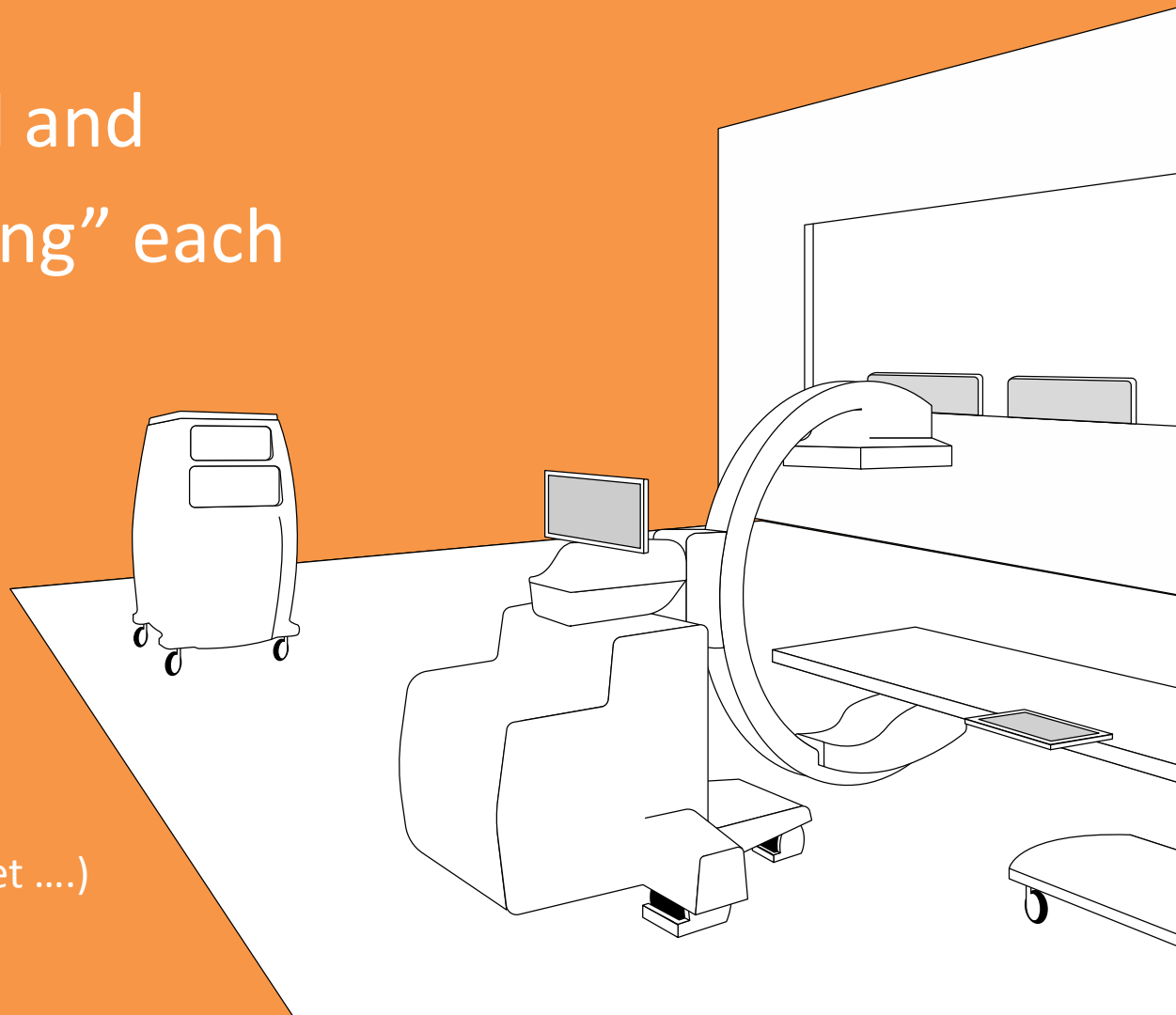
BARCO





What will be
the best?

The patient bed and the C-arm “talking” each other



(available soon on the market)

Thank **you**