

FUJIKURA FIBER OPTICS VIETNAM LTD	
Training textbook : 000-1-TT-0015	Phiên bản: 01

IVUS Catheter manufacturing

24th Aug, 2015

Fujikura Fiber Optics Vietnam Ltd.

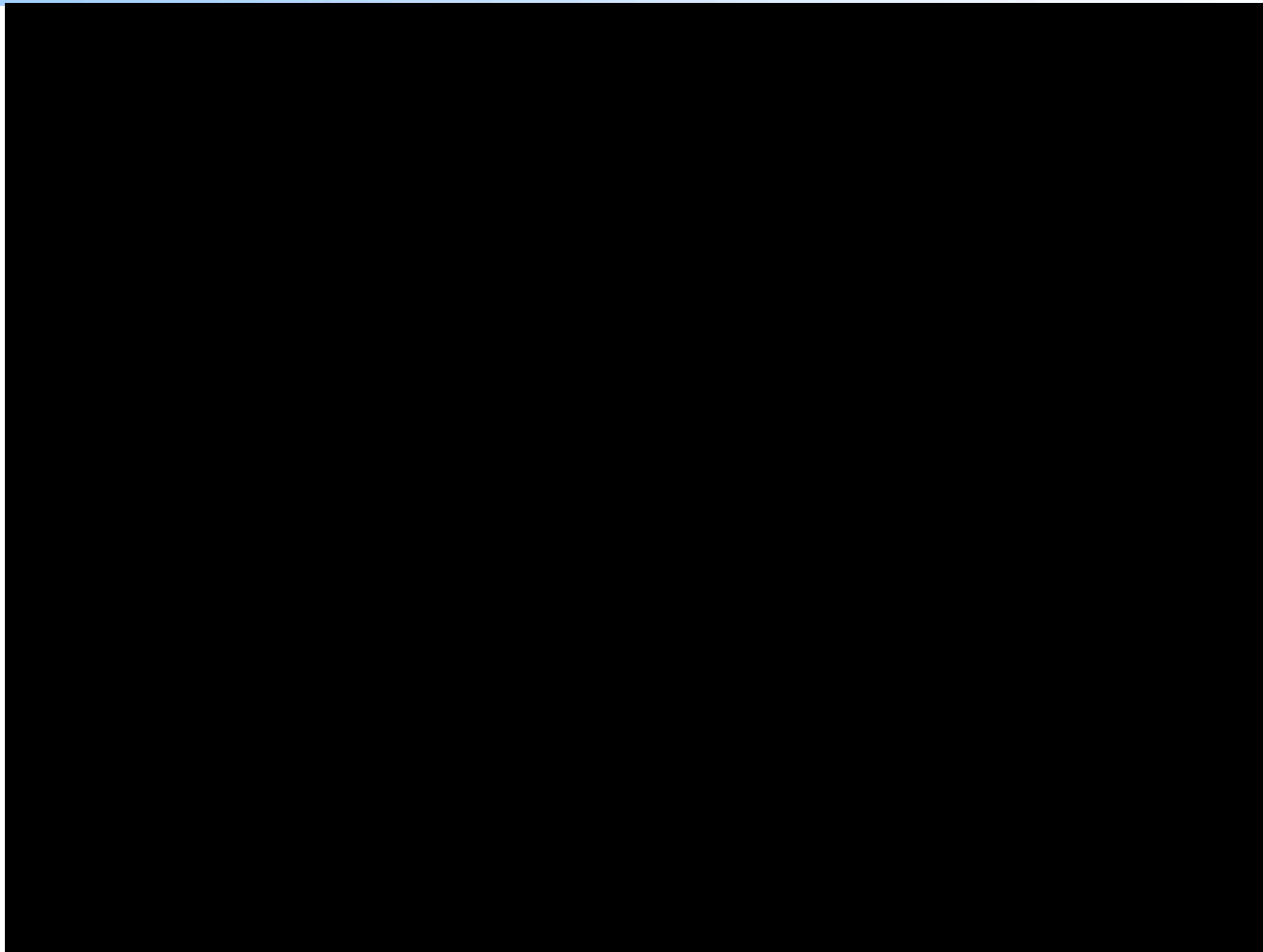


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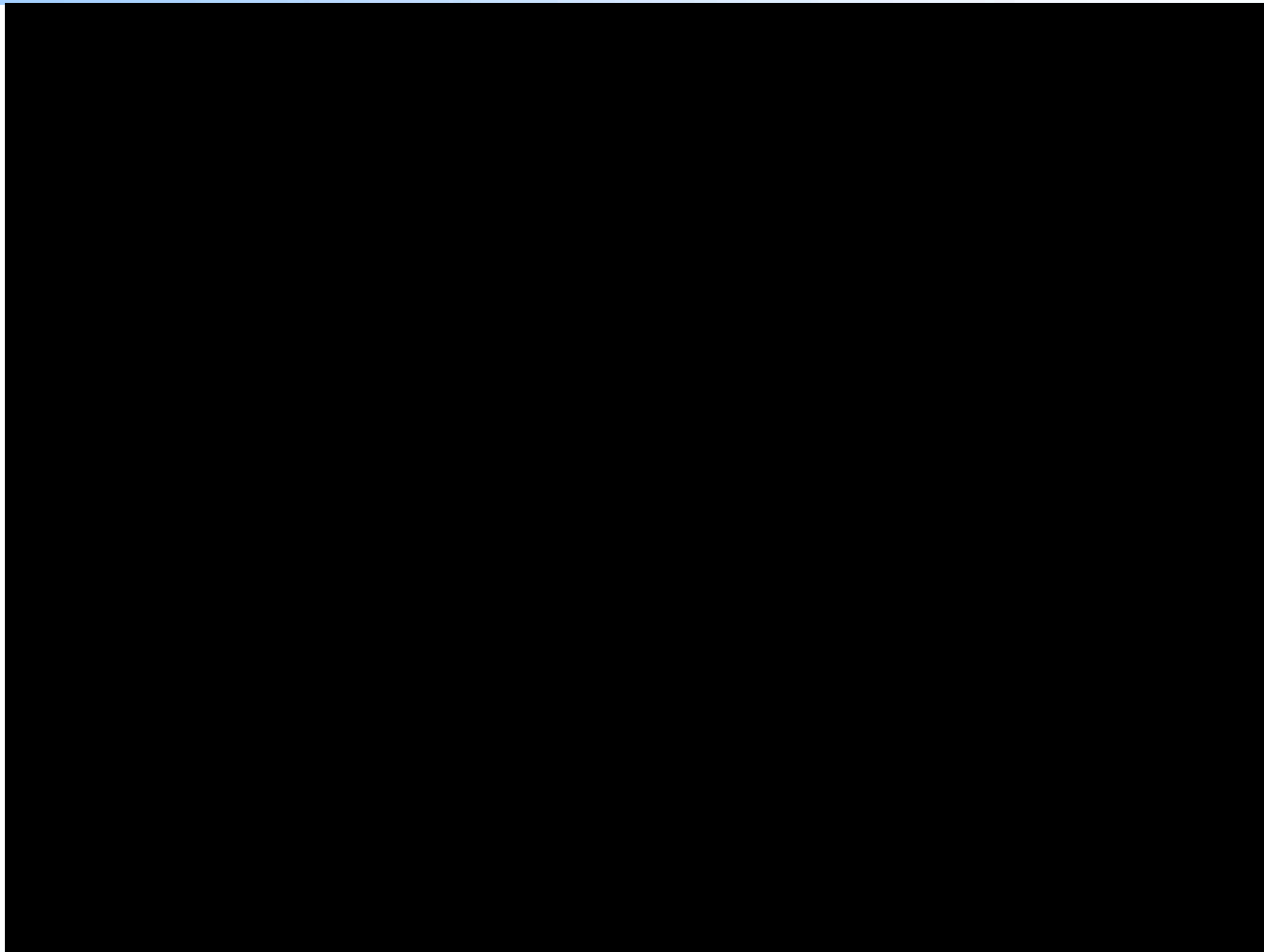
- Heart attack and treatment
- IVUS Catheter structure
- IVUS Catheter principle and advantage
- Brief project introduction

Heart attack and treatment

What is a Heart Attack?



Pathophysiology: Vulnerable Plaque

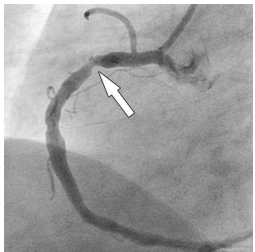


Two treatment options for CAD

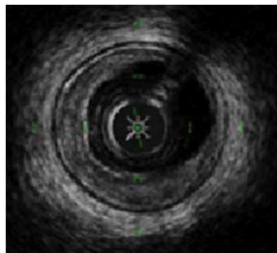


Open Heart Surgery

**Invasive
CABG
Surgery**
(Coronary Artery
Bypass Graft)



Angiogram



IVUS



FFR

**Minimally Invasive
PTCA**

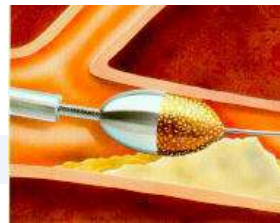
(Percutaneous
Transluminal Coronary
Angioplasty)



Balloons



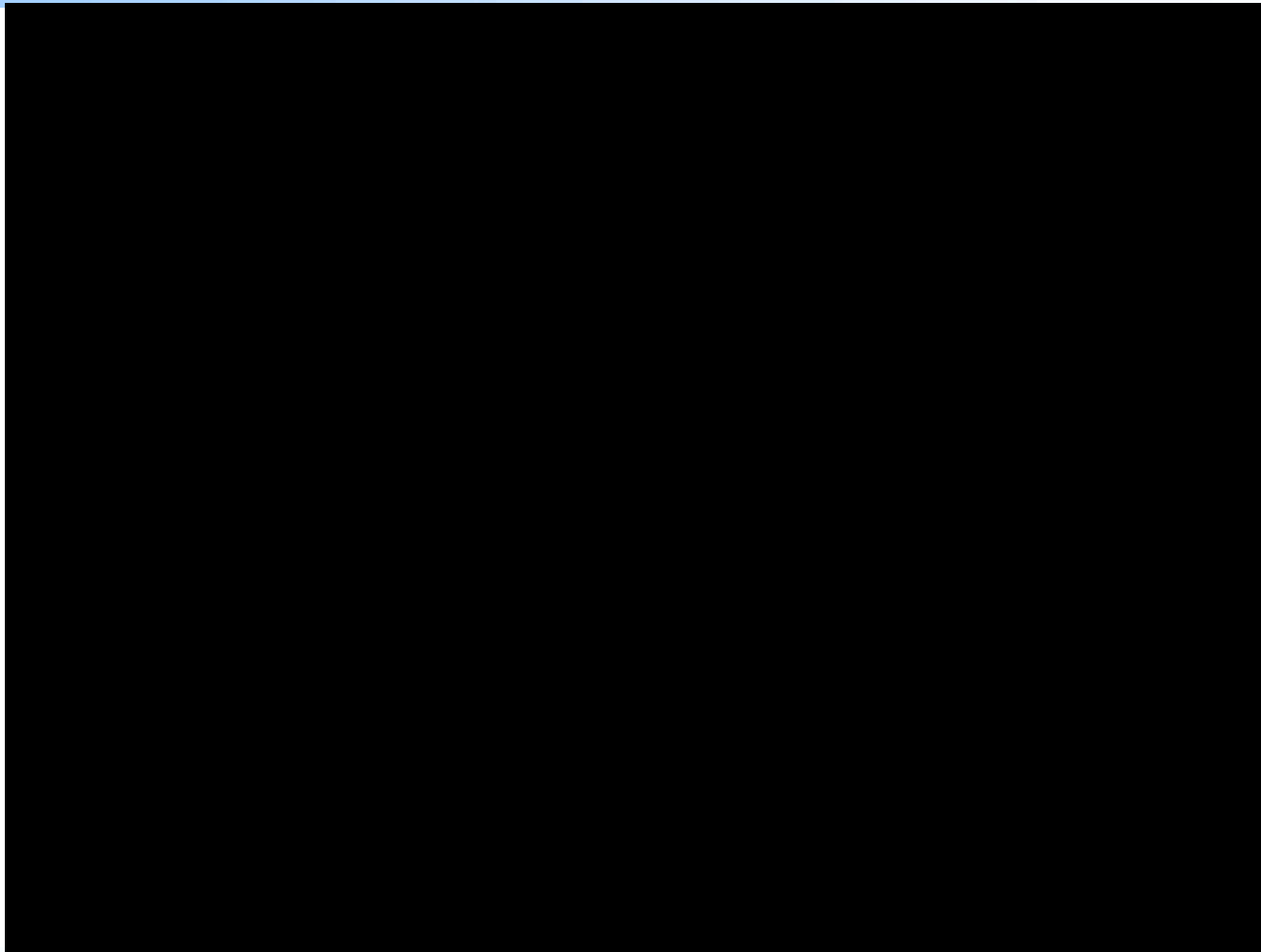
Stents



Atherectomy

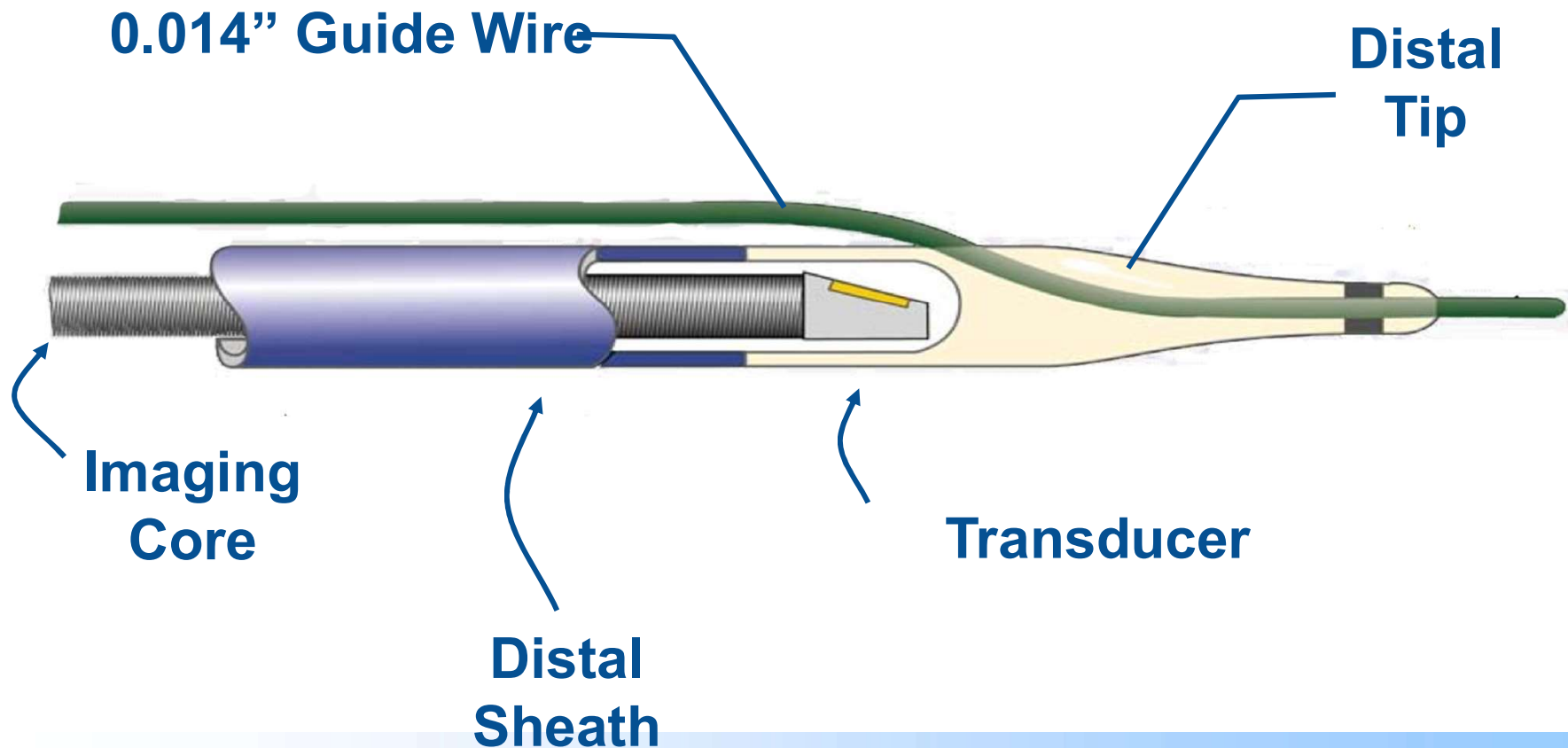
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PTCA (Percutaneous Transluminal Coronary Angioplasty)



IVUS Catheter structure

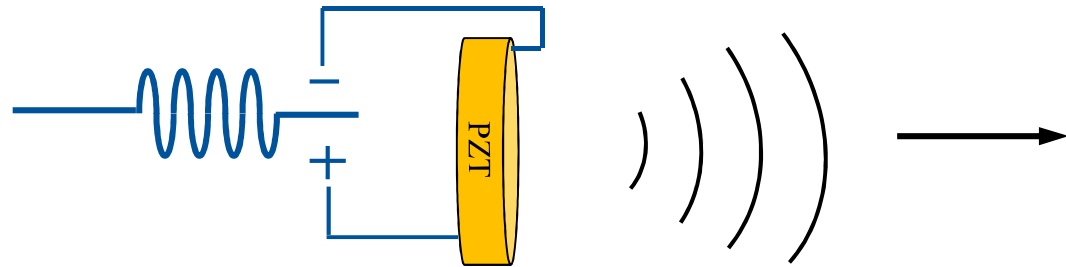
Mechanical IVUS Catheter Features



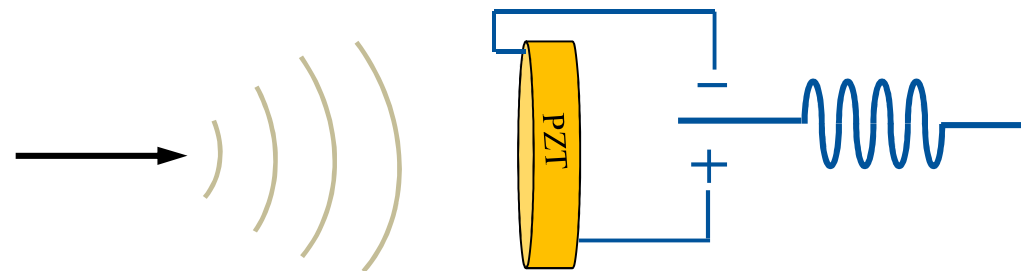
Piezoelectric Effect

Ultrasound transducers use the piezoelectric effect to convert electrical energy into mechanical energy and mechanical energy back into electrical energy

Electrical to pressure
(acoustic) wave
transformation



Pressure (acoustic)
wave to electrical
transformation

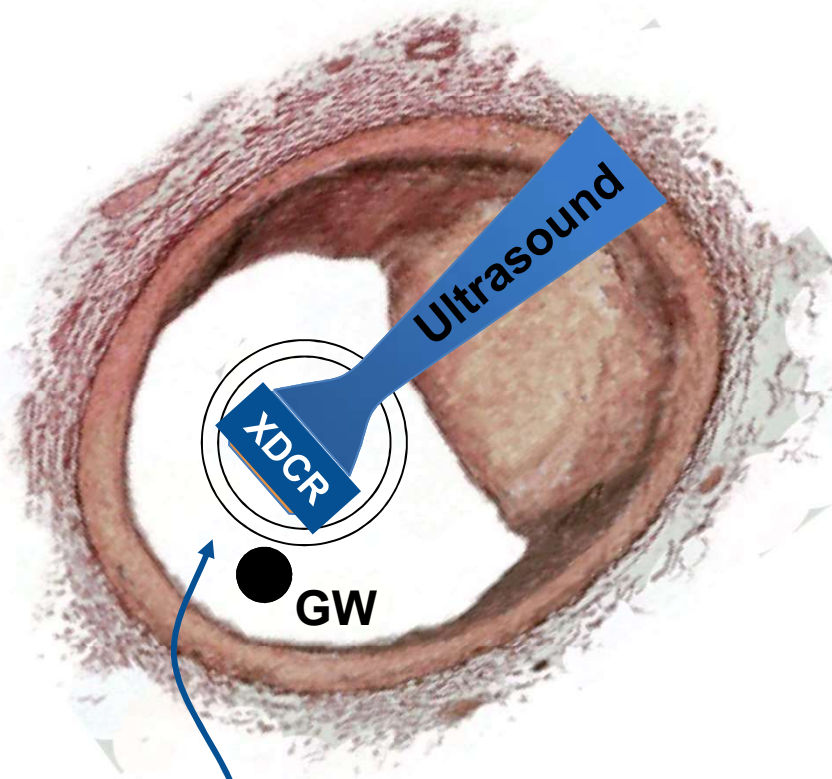


IVUS Catheter principle and advantage

IVUS Uses Standard Imaging Techniques

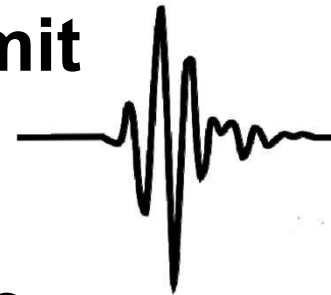
- Confidential -

Diseased Artery

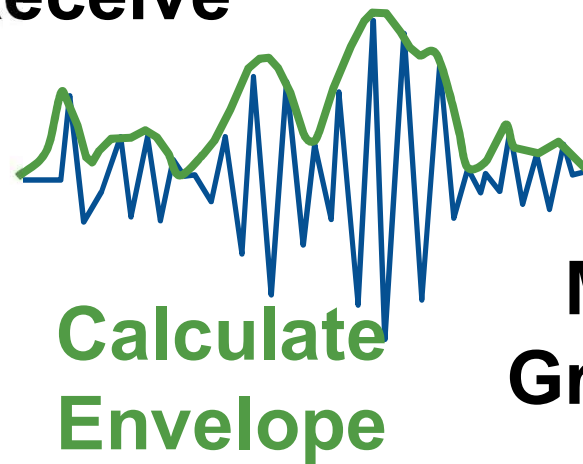


IVUS Catheter

Transmit



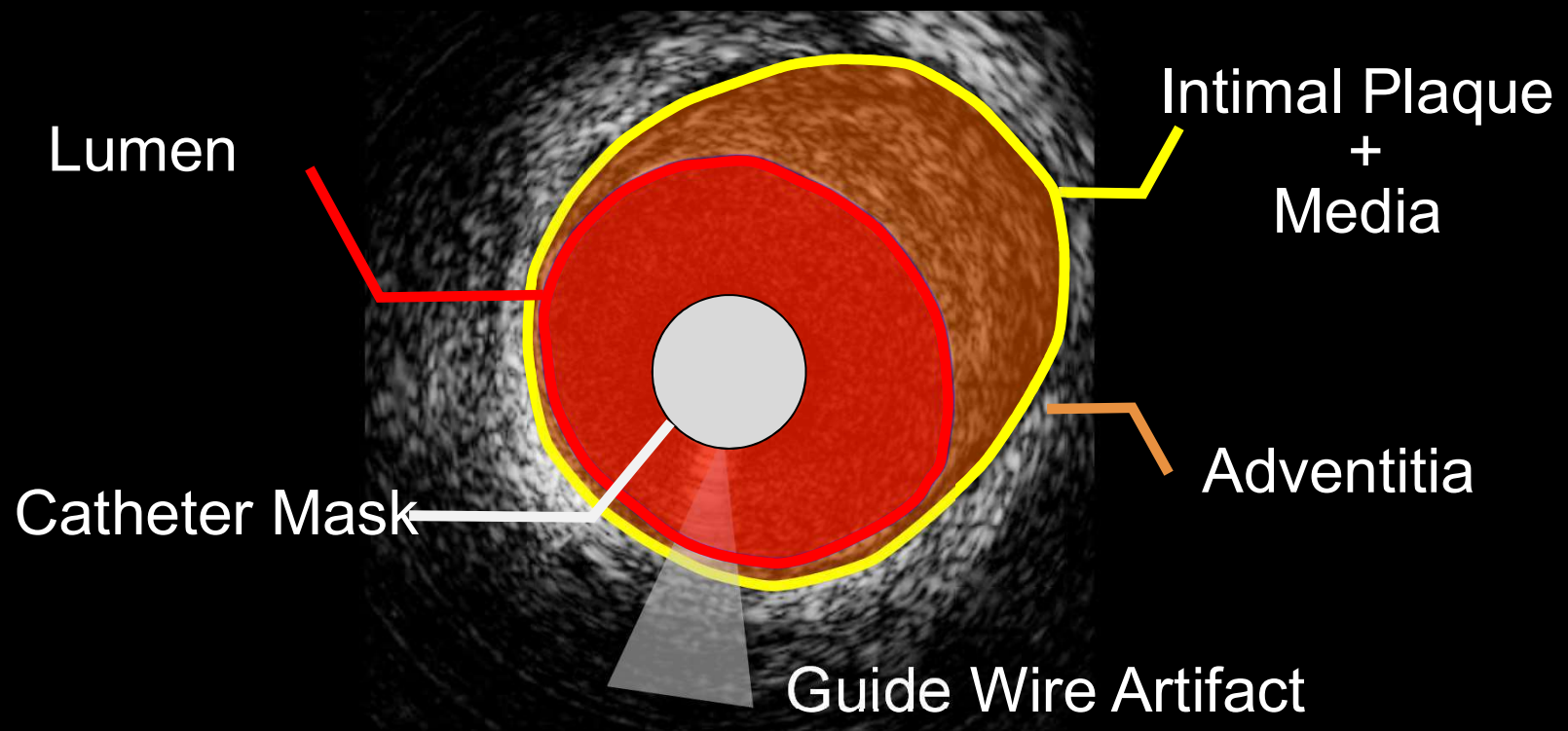
Receive



**Map to
Grayscale**



Anatomy of an IVUS image



IVUS is used to optimize outcomes

- Pre-Intervention
 - Measure vessel size (diameter and length) to select stent size using one of several strategies.
 - Identify proximal and distal reference segments or landing zones (largest lumen with least plaque) to select stent length.
- Post-Intervention
 - Insure Adequate Expansion and Position.
 - Absolute stent cross-sectional area (CSA)
 - Stent CSA relative to a pre-defined reference
 - Full lesion coverage (correct placement)
 - Identify and resolve edge complications

Thank you for your
kind attention!

Biểu mẫu lịch sử thay đổi

Ngày	Người thay đổi	Phiên bản	Mô tả		Lý do thay đổi	Người yêu cầu thay đổi
			Nội dung cũ	Nội dung mới		
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