Industrial Innovation

Where Research Meets Reality

Vic Abate, SVP & CTO, GE


BETTER WORLD
ENERGY
TRANSPORTATION
HEALTHCARE

SEE *the future*

MOVE *the future*

CREATE *the future*

Technical expertise

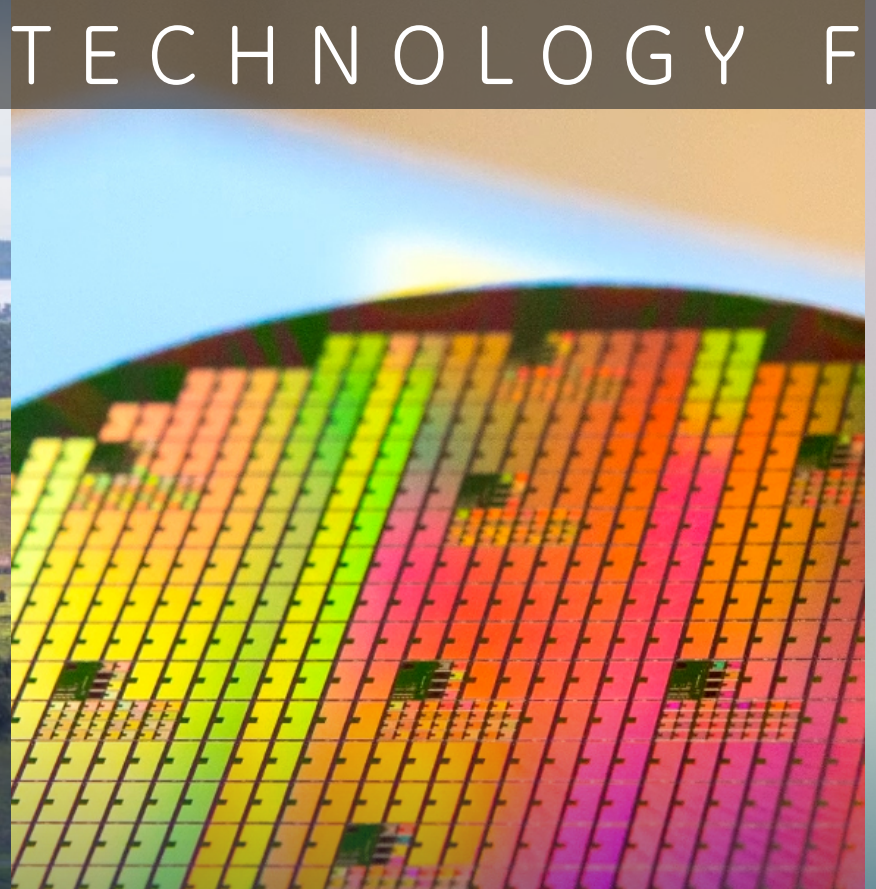
Knowledge sharing

Customer outcomes

ADVANCED TECHNOLOGY FRAMEWORK

PRODUCT BREAKOUTS

INNOVATING faster than "Moore's Law" of our industries



HORIZONTAL BREAKOUTS

Science based DIFFERENTIATION for the GE Store

EXPONENTIAL BREAKOUTS

Applying world's FASTEST moving technologies

PRODUCT TECHNOLOGY BREAKOUTS

3 CENT WIND

World's lowest cost of energy, highest output, land-based wind turbine

65% CC GAS TURBINE

Extending world-record efficiency leadership

PLUG & PLAY MRI

Industry-leading speed to diagnosis ... 10 minute exam

2X WELL

Doubling the production of traditional oil & gas wells

COST LEADING STORAGE & SOLAR

Best-in-class system architecture & products to reduce costs by 20%+

HYBRID PROPULSION

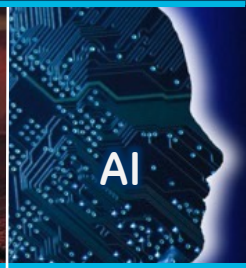
World's most efficient aircraft propulsion system

HORIZONTAL TECHNOLOGY BREAKOUTS

Technology adoption at GE

✓ Innovators & early adopters

✓ Fast follower

	 SiC	 CMC	 Controls / Edge	 Robotics	 Digital Twin	 Invest. Castings	 AI
	Faster	Hotter	Smarter	Productive	Precognitive	Strategic	"No laws"
POWER	✓	✓	✓	✓	✓	✓	✓
RENEWABLES	✓		✓	✓	✓		✓
O&G	✓	✓	✓	✓	✓	✓	✓
CURRENT	✓		✓		✓		✓
AVIATION	✓	✓	✓	✓	✓	✓	✓
TRANSPORTATION	✓		✓	✓	✓		✓
HEALTHCARE	✓		✓	✓	✓		✓

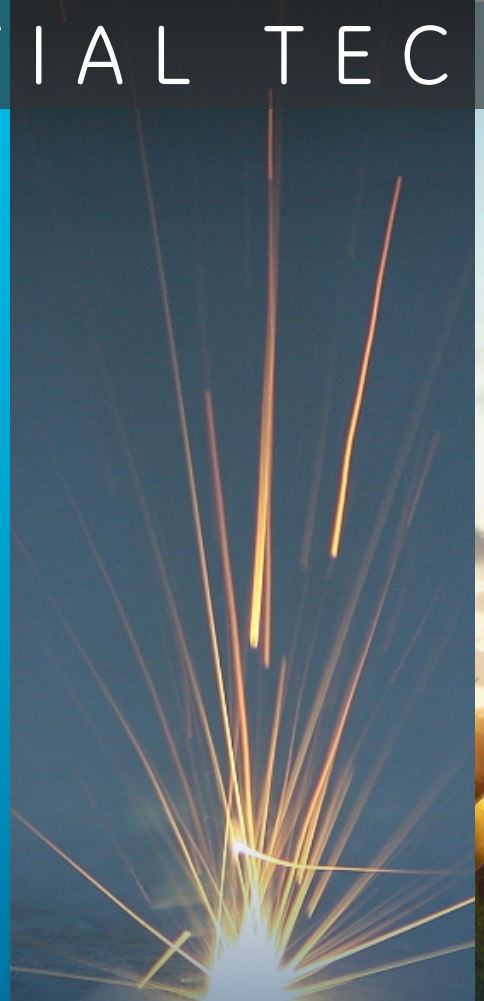
EXPONENTIAL TECHNOLOGY BREAKOUTS

FUTURE TECHNOLOGY TRENDS

Cost ↓

Performance ↑

Degrees of freedom ↑

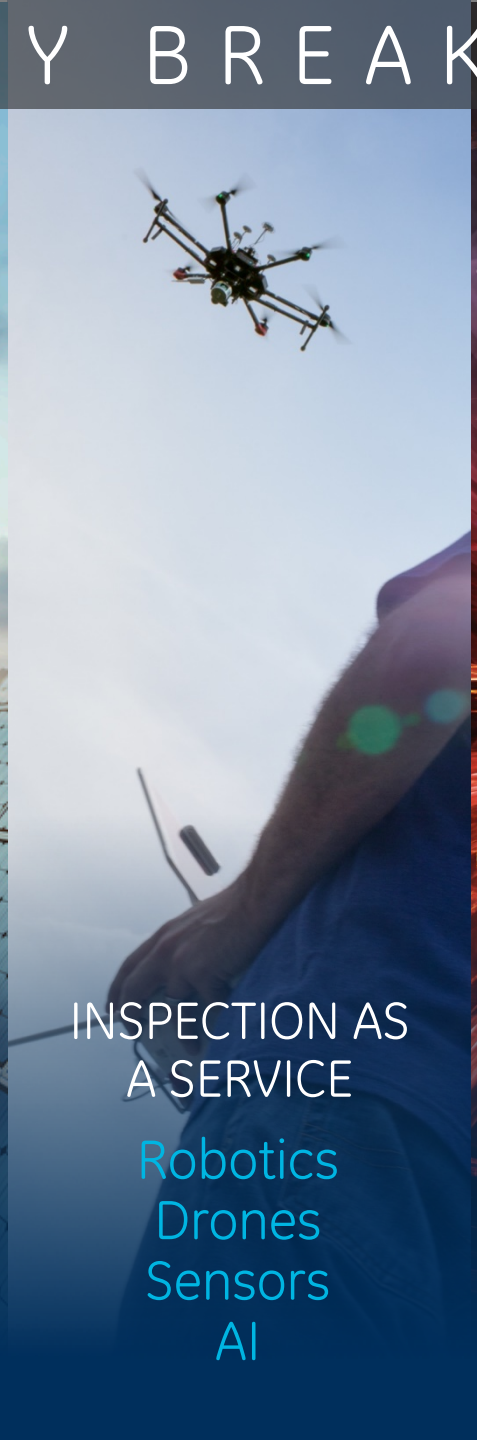


ADDITIVE MANUFACTURING

Lasers
Materials
Systems
Software

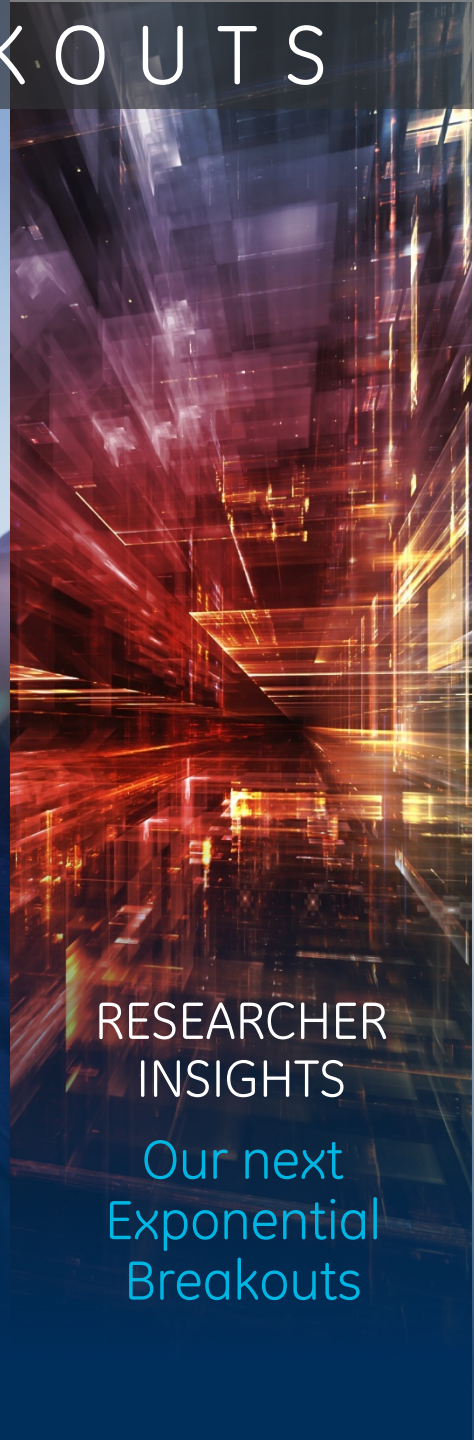
DISPATCHABLE RENEWABLES

Renewables
Batteries
Electric vehicles
Grid



INSPECTION AS A SERVICE

Robotics
Drones
Sensors
AI



RESEARCHER INSIGHTS

Our next Exponential Breakouts

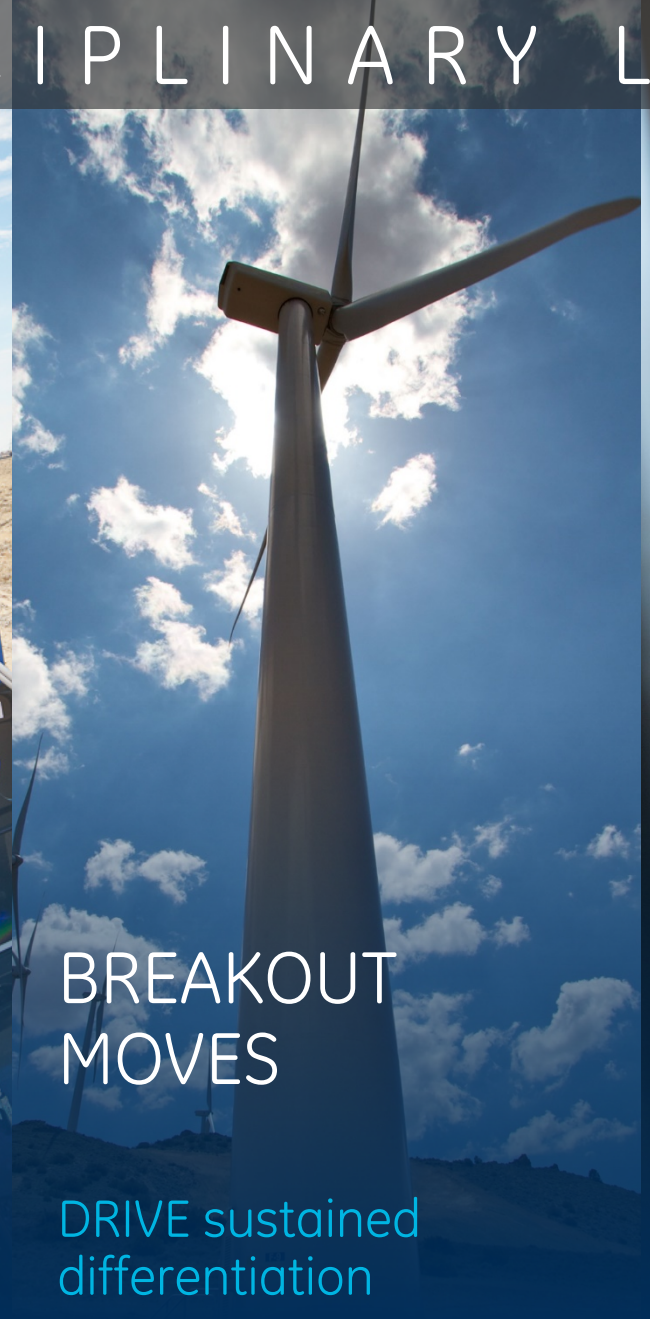
NEW INTERDISCIPLINARY LABS

PRODUCT MANAGEMENT AS A SCIENCE

EFFICIENT capital deployment

VARIABLE COST PRODUCTIVITY

EXPAND product margins



BREAKOUT MOVES

DRIVE sustained differentiation

FORGE LAB

DEMONSTRATE exponential technologies

TECHNOLOGY+

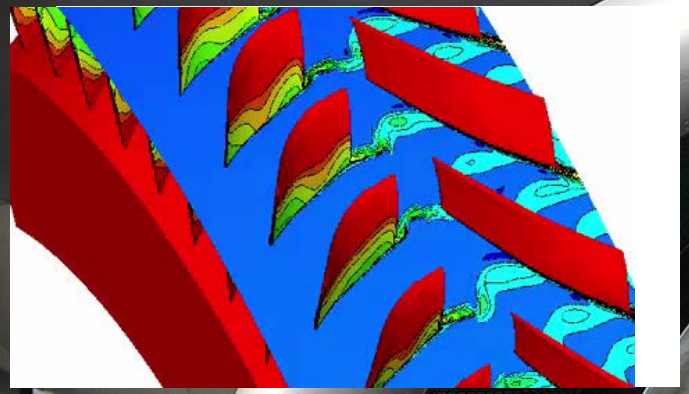
CUTTING EDGE DESIGN

Material Science

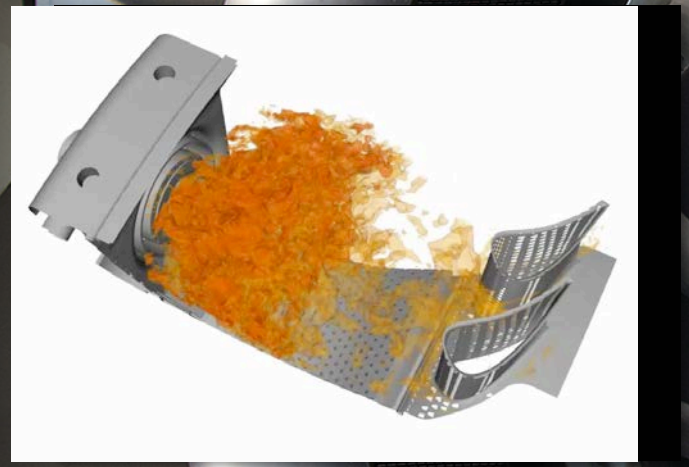
Aerodynamics

Physics & Analytics

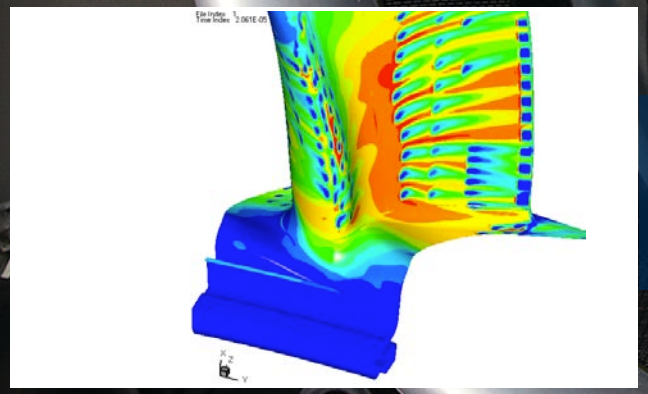
COMPRESSION



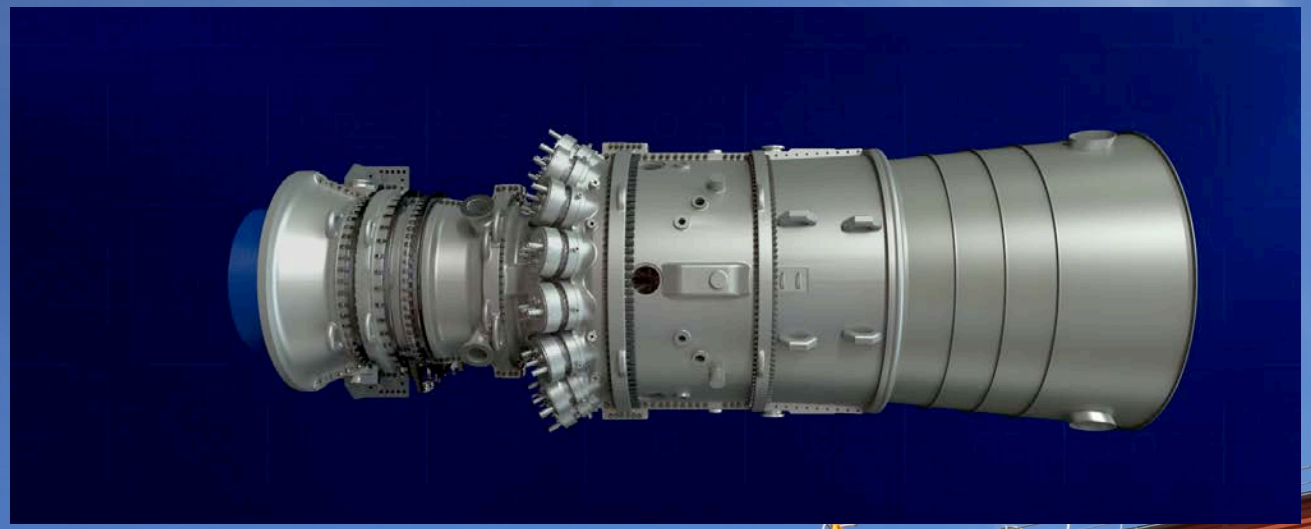
COMBUSTION



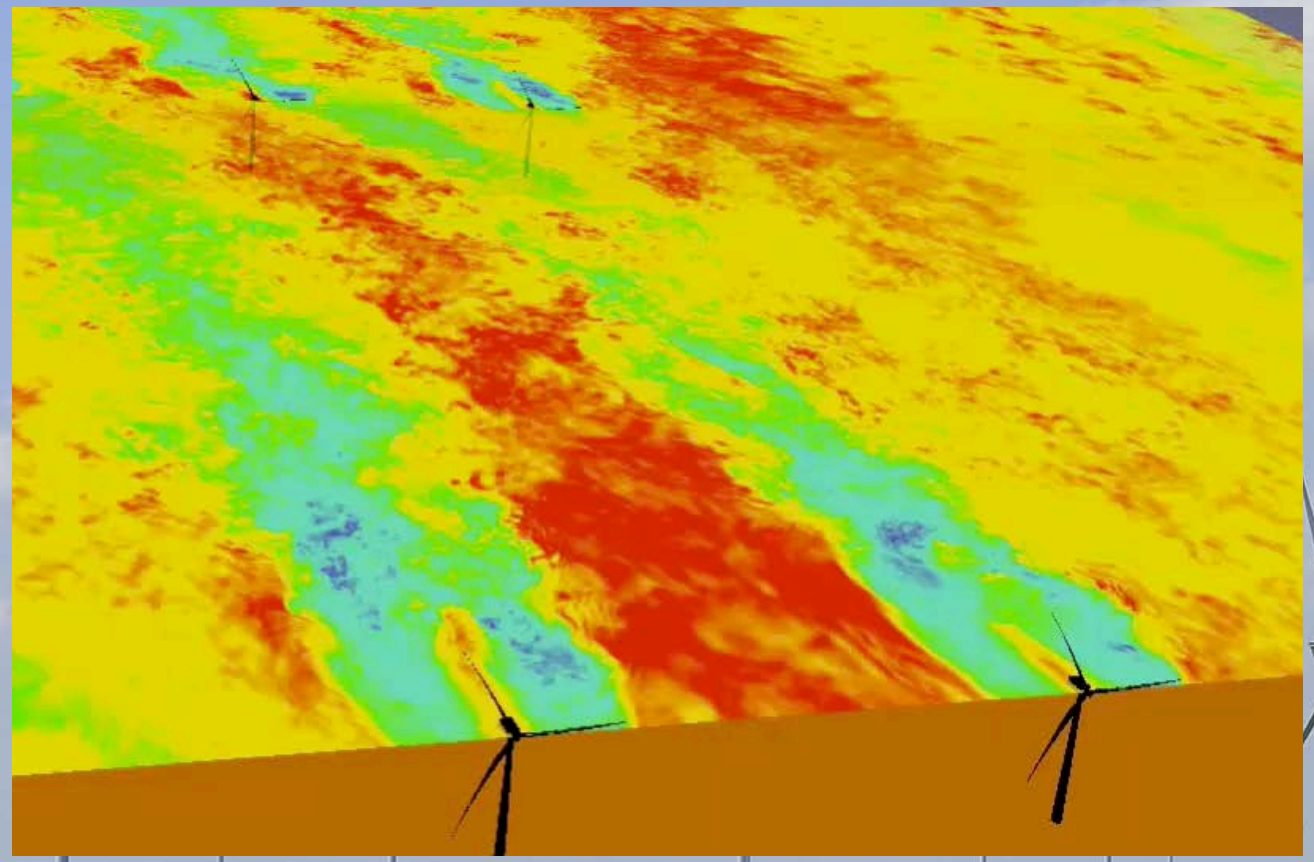
WORK



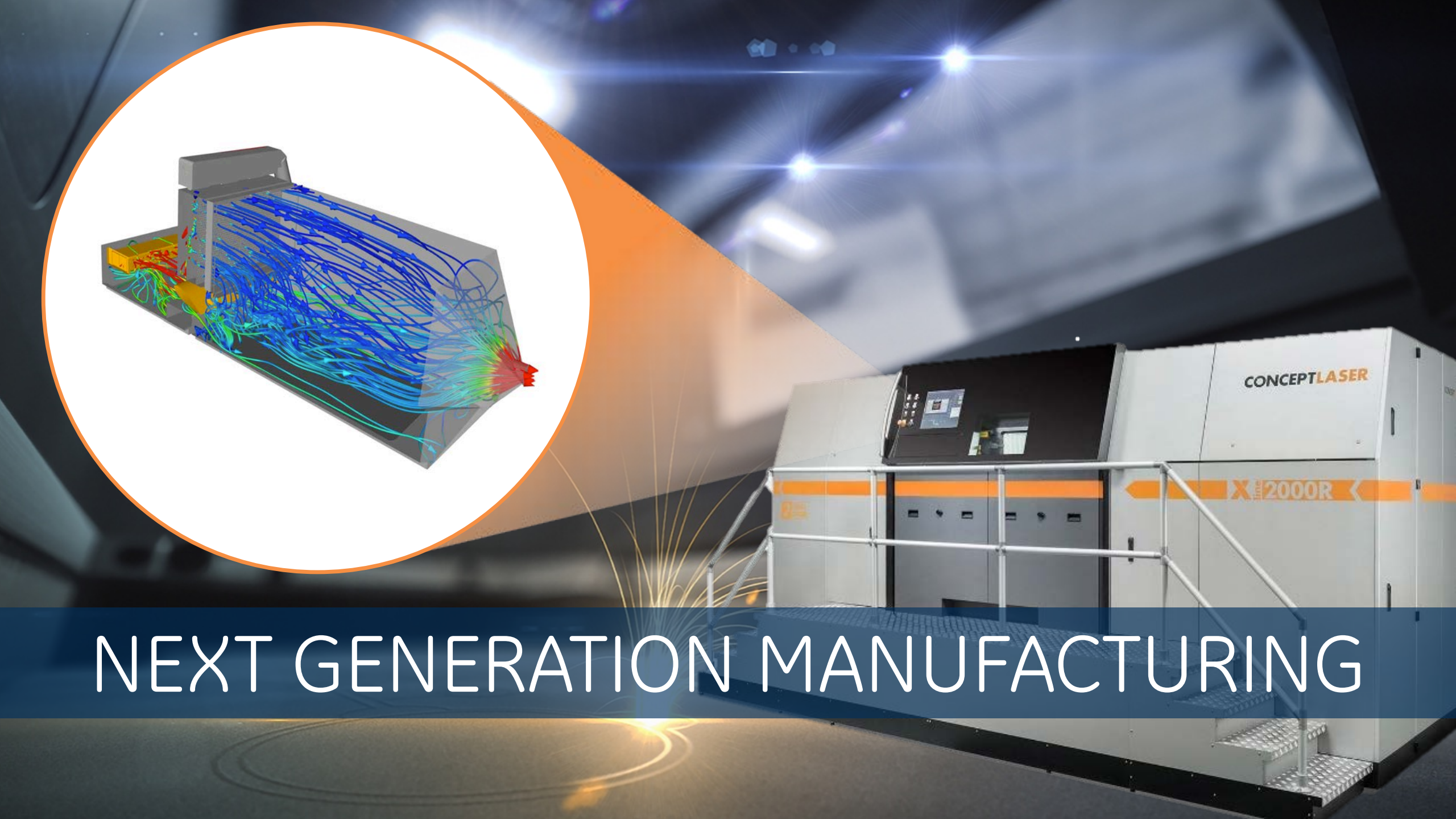
BEST PERFORMANCE



WORLD'S MOST EFFICIENT GAS TURBINE



HIGHEST PERFORMANCE WIND TURBINE



NEXT GENERATION MANUFACTURING

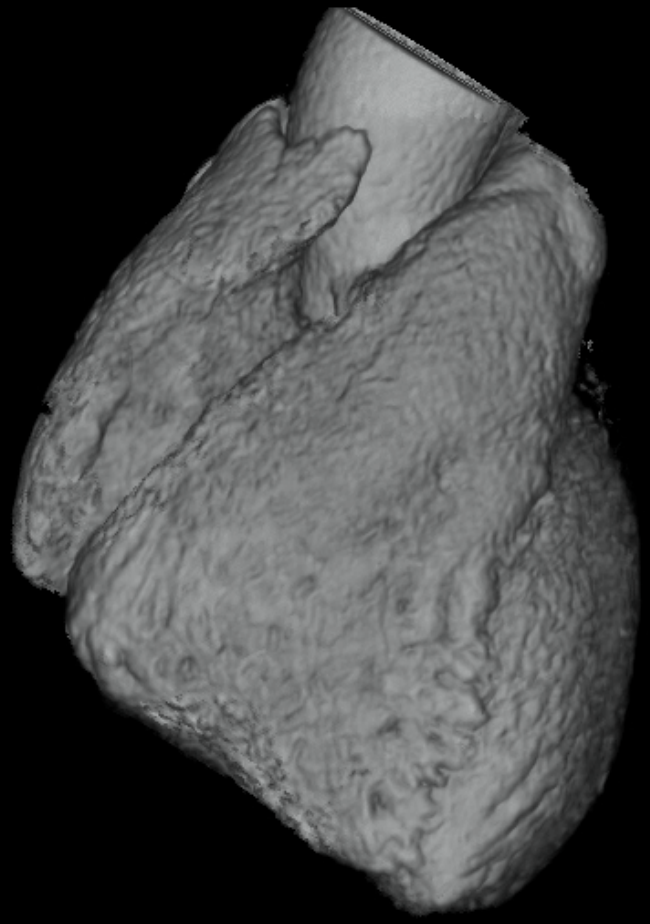
QUALITY MANUFACTURING

X-ray source

Detectors

Reconstruction algorithms

Image analytics



HUMANS TO HARDWARE

RELIABLE FLEETS

Fleet diagnostics

Digital Twin

Machine learning

Reliability engineering


WIND TURBINES
35,000
LOCOMOTIVES
22,500
GAS TURBINES
7,000
CT SCANNERS
13,000
ENGINES
33,000
RELIABILITY
FUEL BURN
EFFICIENCY
QUALITY
TIME ON WING



Better technology, better world