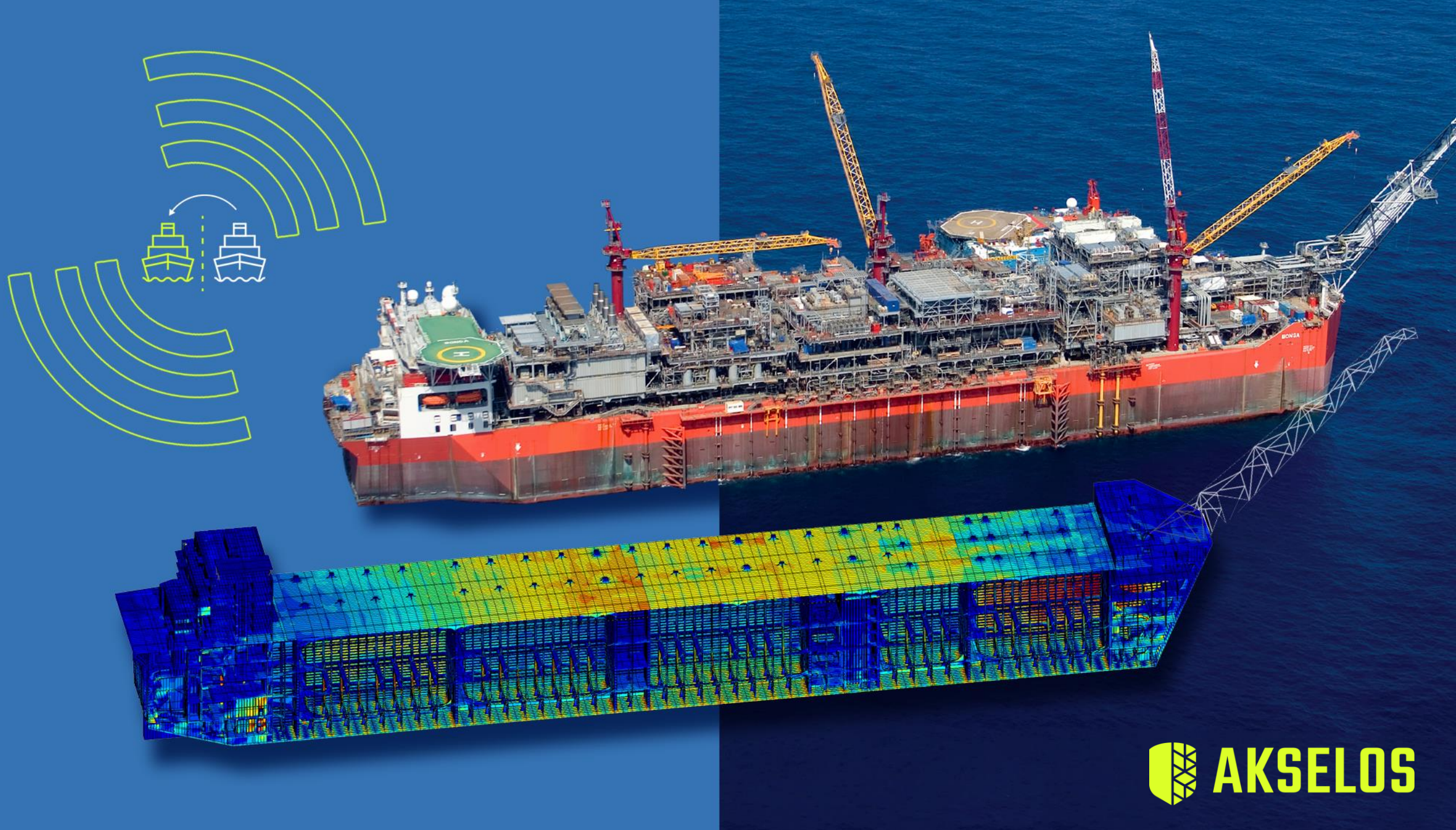
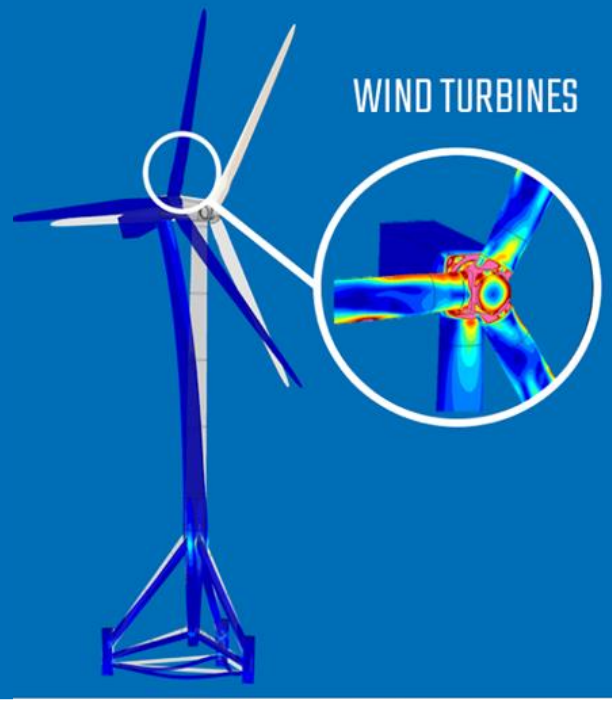
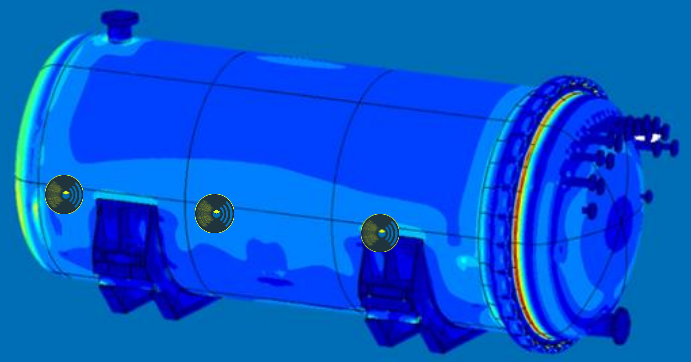
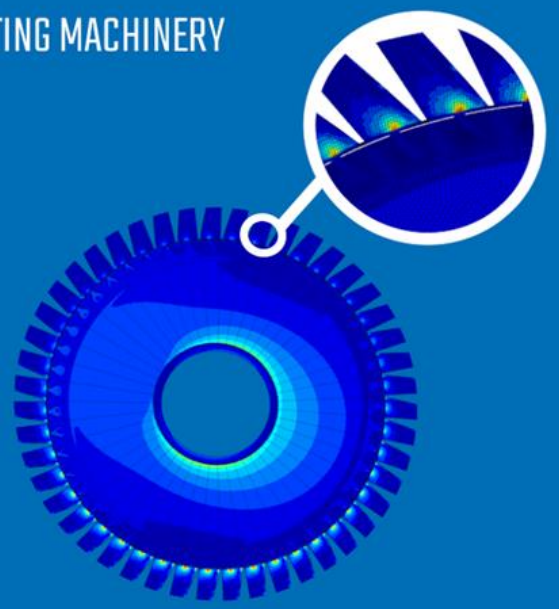
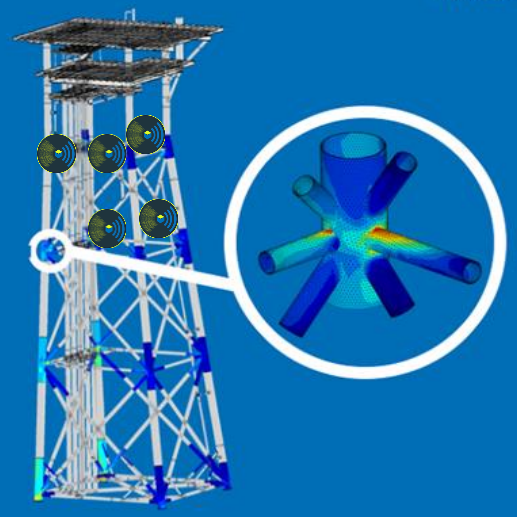
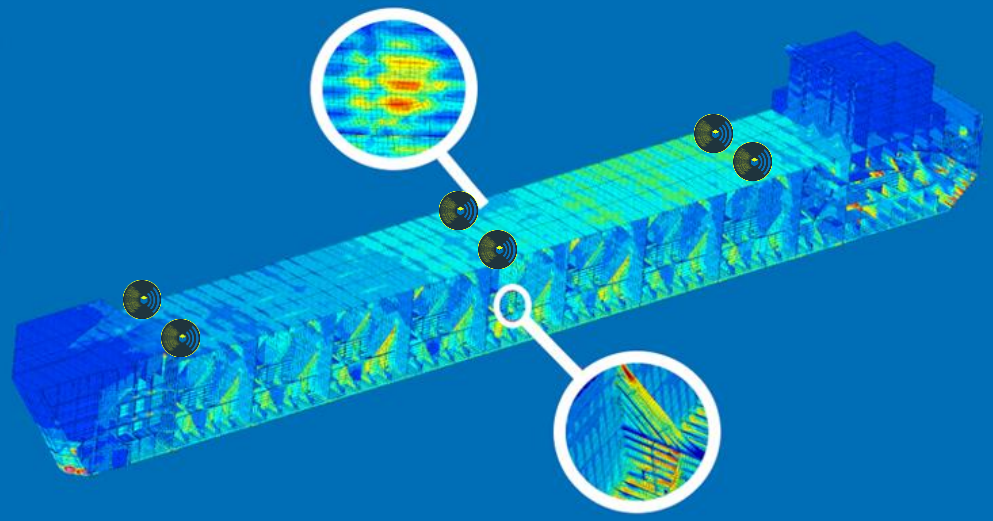

AKSELOS

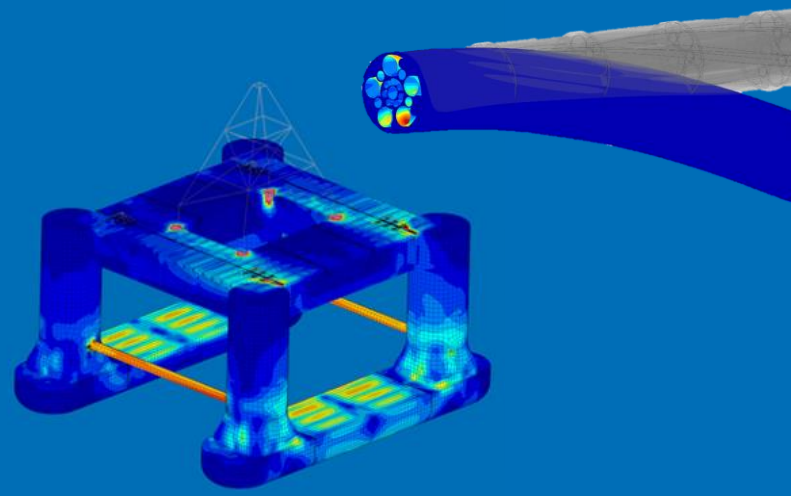

WIND TURBINES

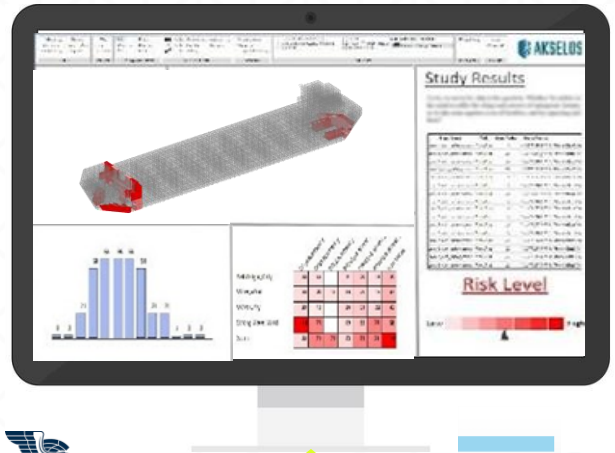

PRESSURE VESSELS


ROTATING MACHINERY


FIXED STRUCTURES


FLOATING STUCTURES

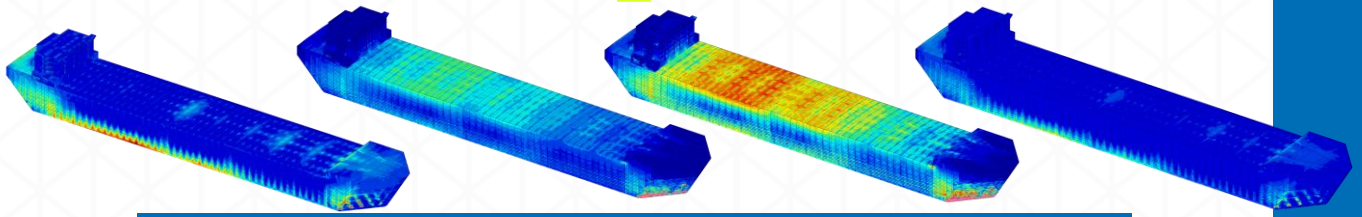

RISER/UMBILICALS



ABS

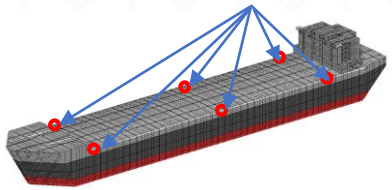
DNV·GL

CLASS STANDARDS

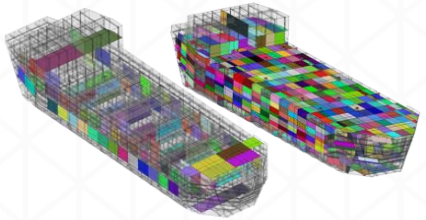


1000s OF RB-FEA SOLVES IN MINUTES

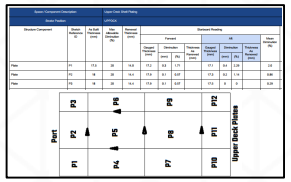
SENSORS



ENTITY IDENTIFICATION

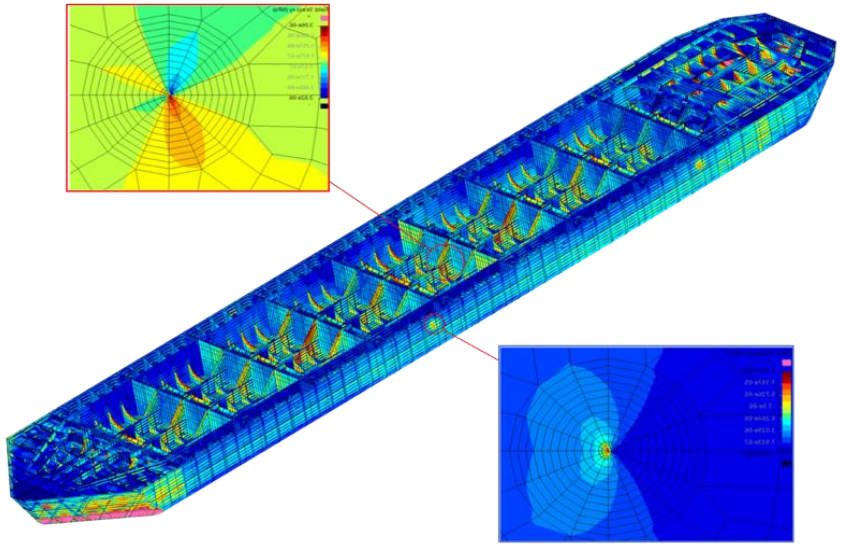


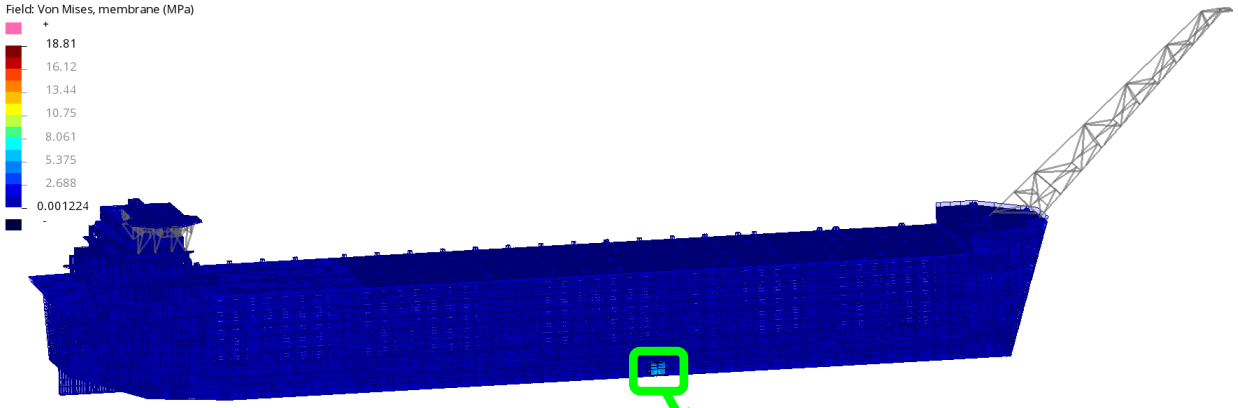
INSPECTION DATA

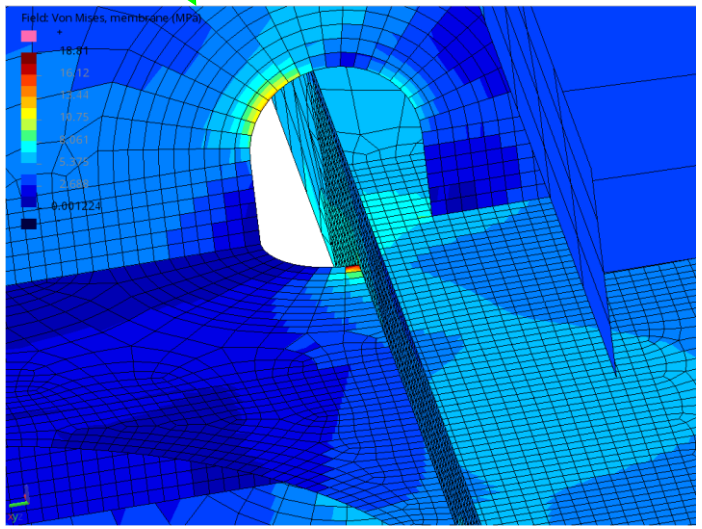


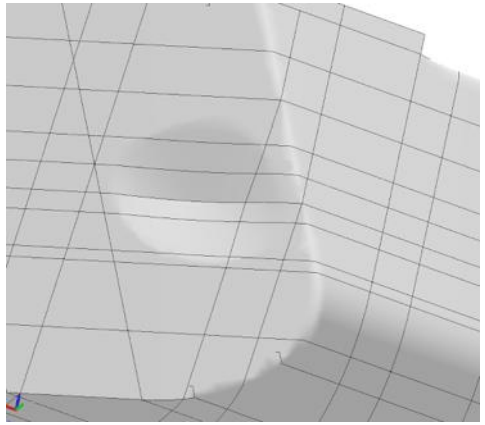
COMPLETE DIGITAL THREAD

Holistic Model with Condition Data & Enhanced Fatigue Analysis

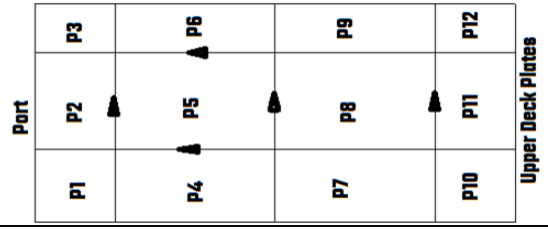








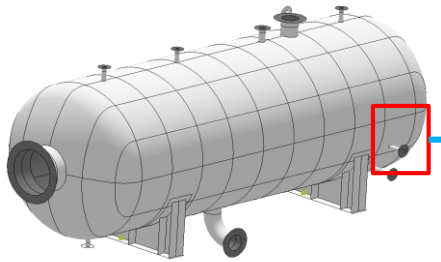
Space / Component Description:			Upper Deck Shell Plating										
Strake Position:			UPPDCK										
Structure Component	Sketch Reference ID	As Built Thickness (mm)	Max Allowable Diminution (%)	Renewal Thickness (mm)	Starboard Reading								
					Forward				Aft				Mean Diminution (%)
					Gauged Thickness (mm)	Diminution (mm)	Diminution (%)	Thickness As Renewed (mm)	Gauged Thickness (mm)	Diminution (mm)	Diminution (%)	Thickness As Renewed (mm)	
Plate	P1	17.5	20	14.0	17.2	0.3	1.71		17.1	0.4	2.29		2.0
Plate	P2	18	20	14.4	17.9	0.1	0.57		17.3	0.2	1.14		0.86
Plate	P3	18	20	14.4	17.9	0.1	0.57		17.5	0	0		0.29



4x increase in predicted fatigue life without changing safety factors

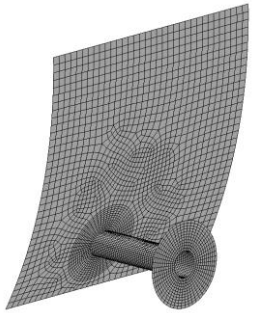
AKSELOS

Digital Twin for Pressure Vessels



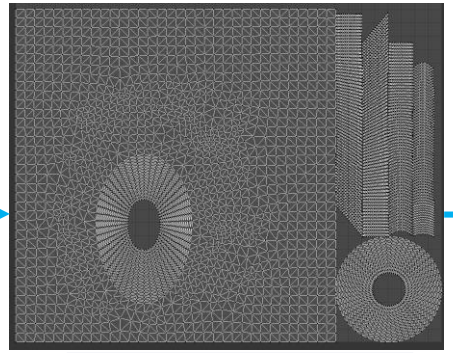
Pristine Model

(a)



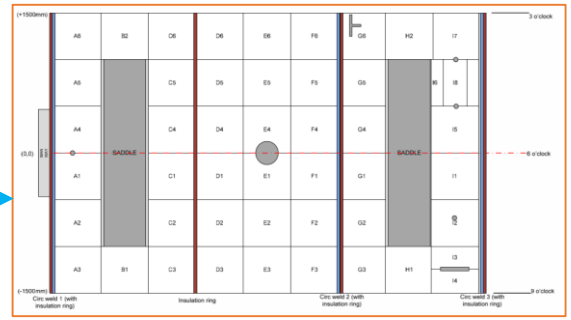
Shell component

(b)



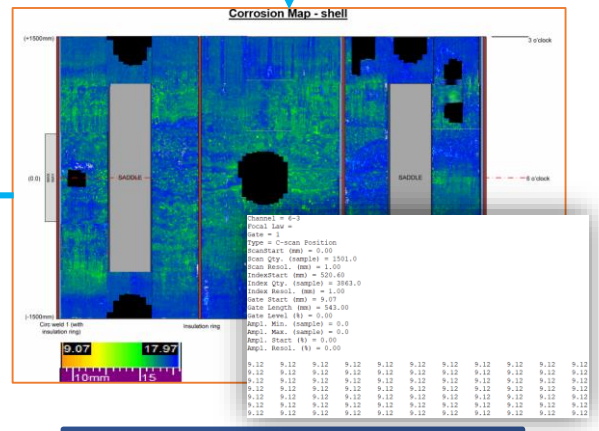
2D UV mapping

(c)



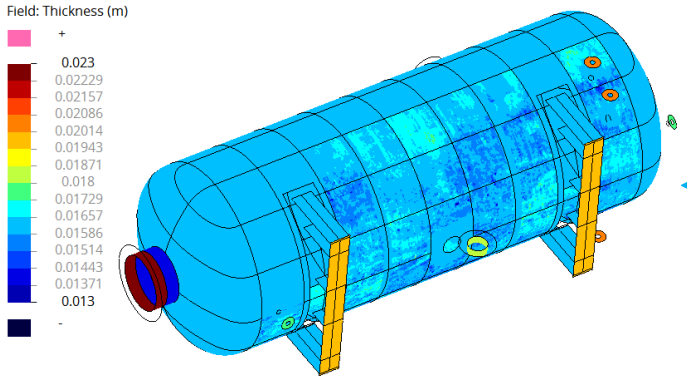
Scan plan

(d)



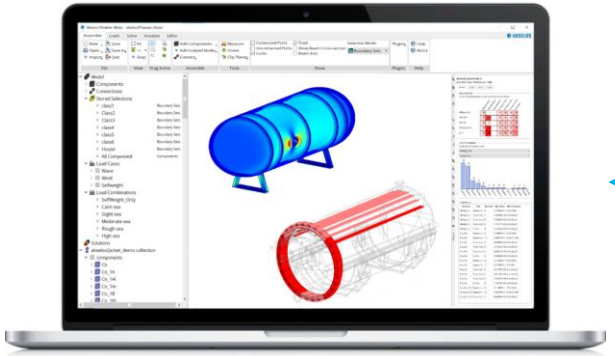
Thickness profile

(e)



Thicknesses mapped to Digital Twin

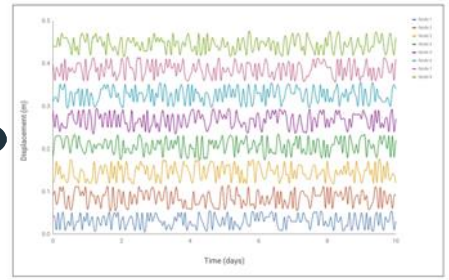
(f)



Automated re-analysis and reporting

AKSELOS

Digital Twin Integrated with Sensor Data



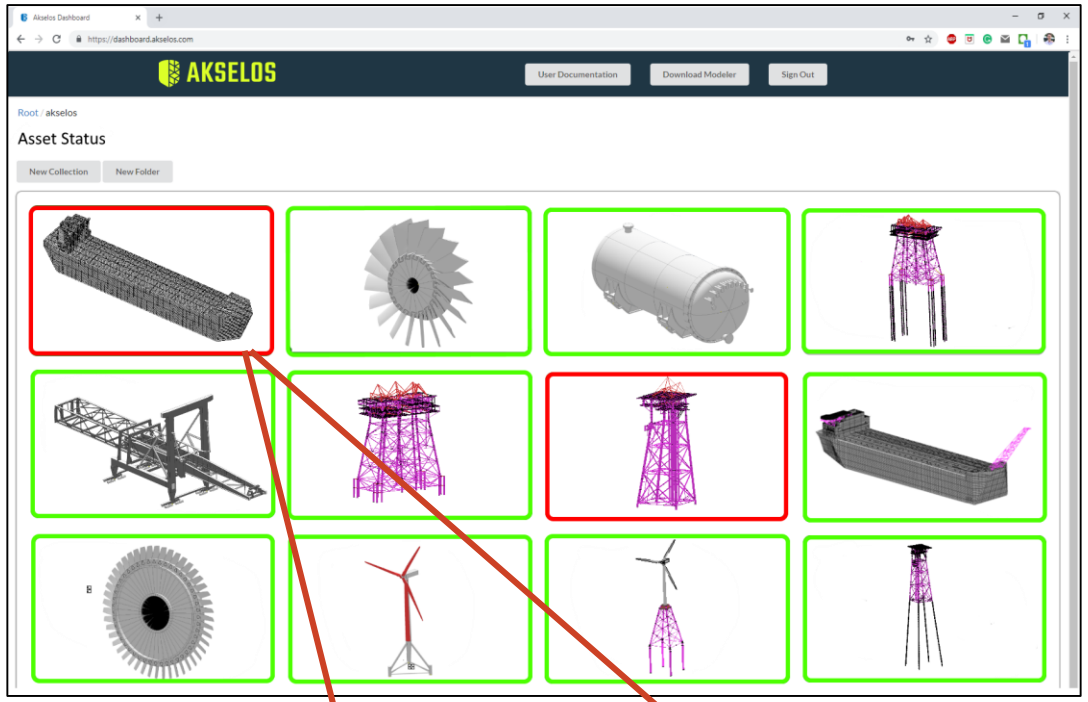
Sensor data

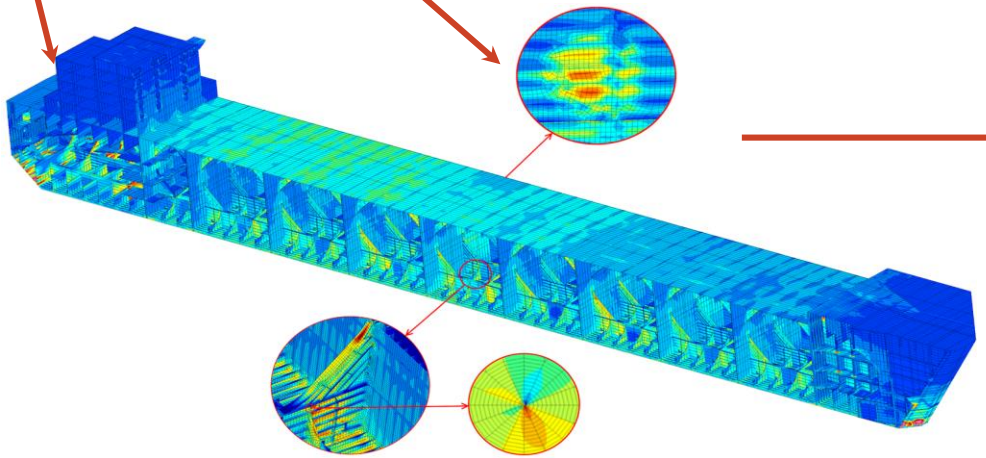
Day 1

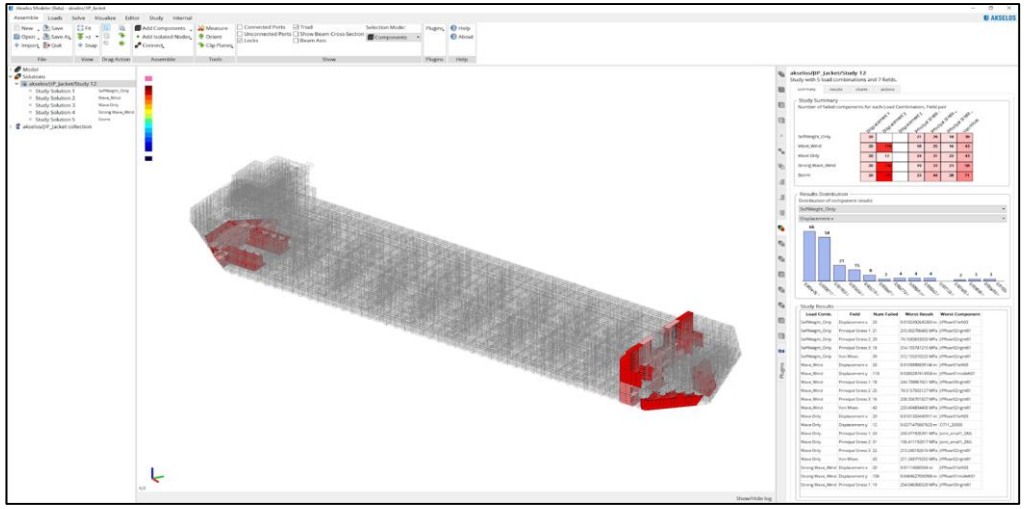
Day 4

Day 10

Cloud-based Dashboard to Monitor Critical Assets



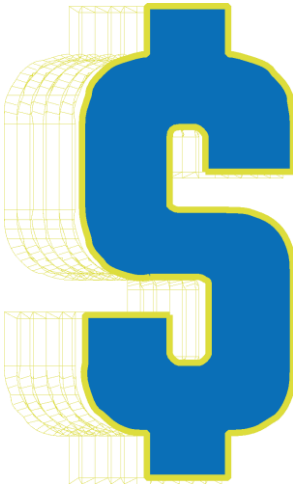




AKSELOS

VALUE FRAMES FOR UPSTREAM OIL & GAS

EACH WORTH $100K TO OVER $100M



1. LICENCE TO OPERATE
2. ASSET LIFE EXTENSION
3. OPEX REDUCTION
4. WORKFLOW EFFICIENCY
5. CAPEX IMPROVEMENT

Question: What is the best way to bring the value of Digital Twins to O&M for nuclear reactors?