



ULSTEIN®

# ► WEIGHT ESTIMATION CHALLENGES

RANDI ANETTE FIKKAN  
WEIGHT ENGINEER  
ULSTEIN DESIGN & SOLUTIONS





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# ► AGENDA

- ABOUT ULSTEIN
- PROCESSES
- WEIGHT ESTIMATION
- CHALLENGES
- SUMMARY
- QUESTIONS

# TURNING VISIONS INTO REALITY

- ▶ ***We create tomorrow's solutions  
for sustainable marine operations***

# ABOUT ULSTEIN

- ▶ Nearly 100 years of experience in the maritime industry
- ▶ Innovator in maritime equipment and ships

**700**

Employees

**7**

Countries

**2.1 billions**

NOK in order

**Founded 1917**



**Family-owned, 3<sup>rd</sup> generation**

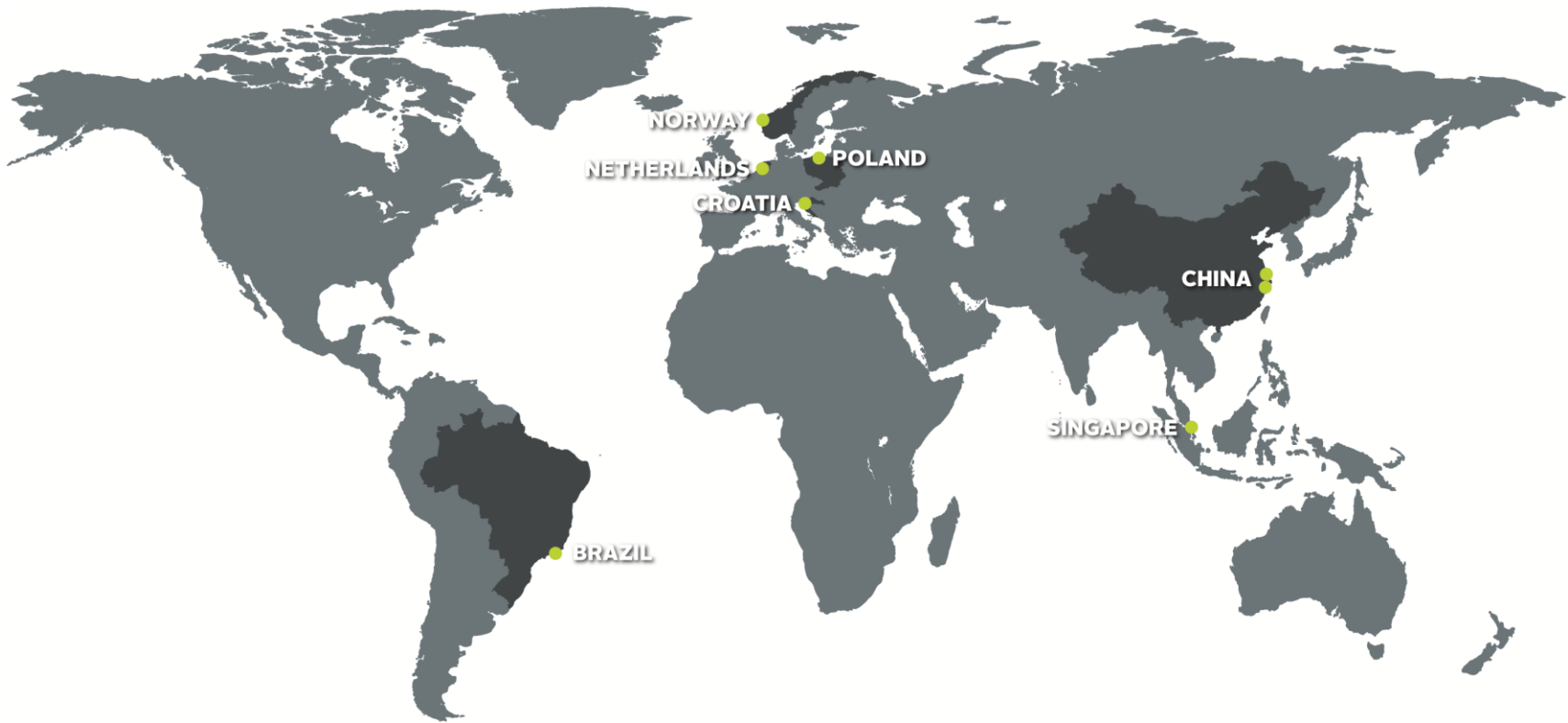


**Norway**

HQ Ulsteinvik



# GLOBAL







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# BUSINESS AREAS



**SHIP DESIGN & SOLUTIONS**



**SHIPBUILDING**



**POWER & CONTROL**



**SHIPPING**



# DESIGNED TO SOLVE CHALLENGES



**PLATFORM SUPPLY**



**ANCHOR HANDLING**



**SUBSEA/IMR/SURF**



**SEISMIC**



**EMERGENCY  
RESPONSE RESCUE**



**DIVING SUPPORT**



**OFFSHORE WIND**



**HEAVY LIFT**



**DRILLING**





# ► MAIN TOPICS

- PROCESSES
- WEIGHT ESTIMATION
- CHALLENGES



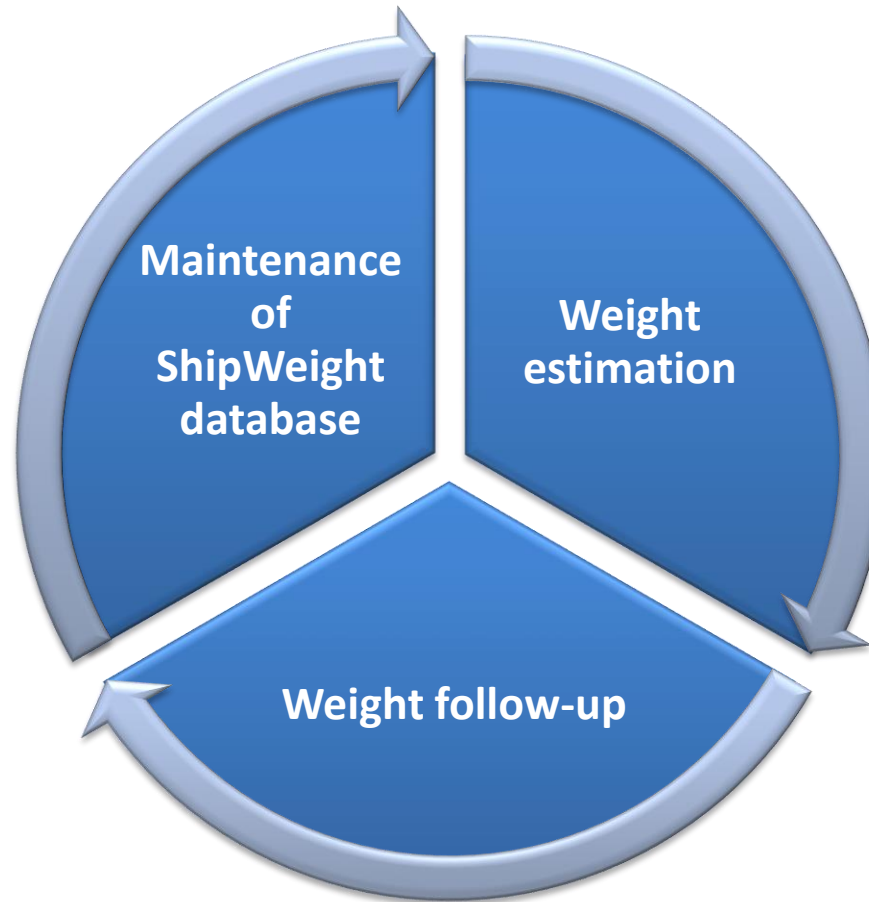
# WHY ESTIMATE WEIGHTS?

**Cost analysis**

**Stability analysis**

**Deadweight analysis**

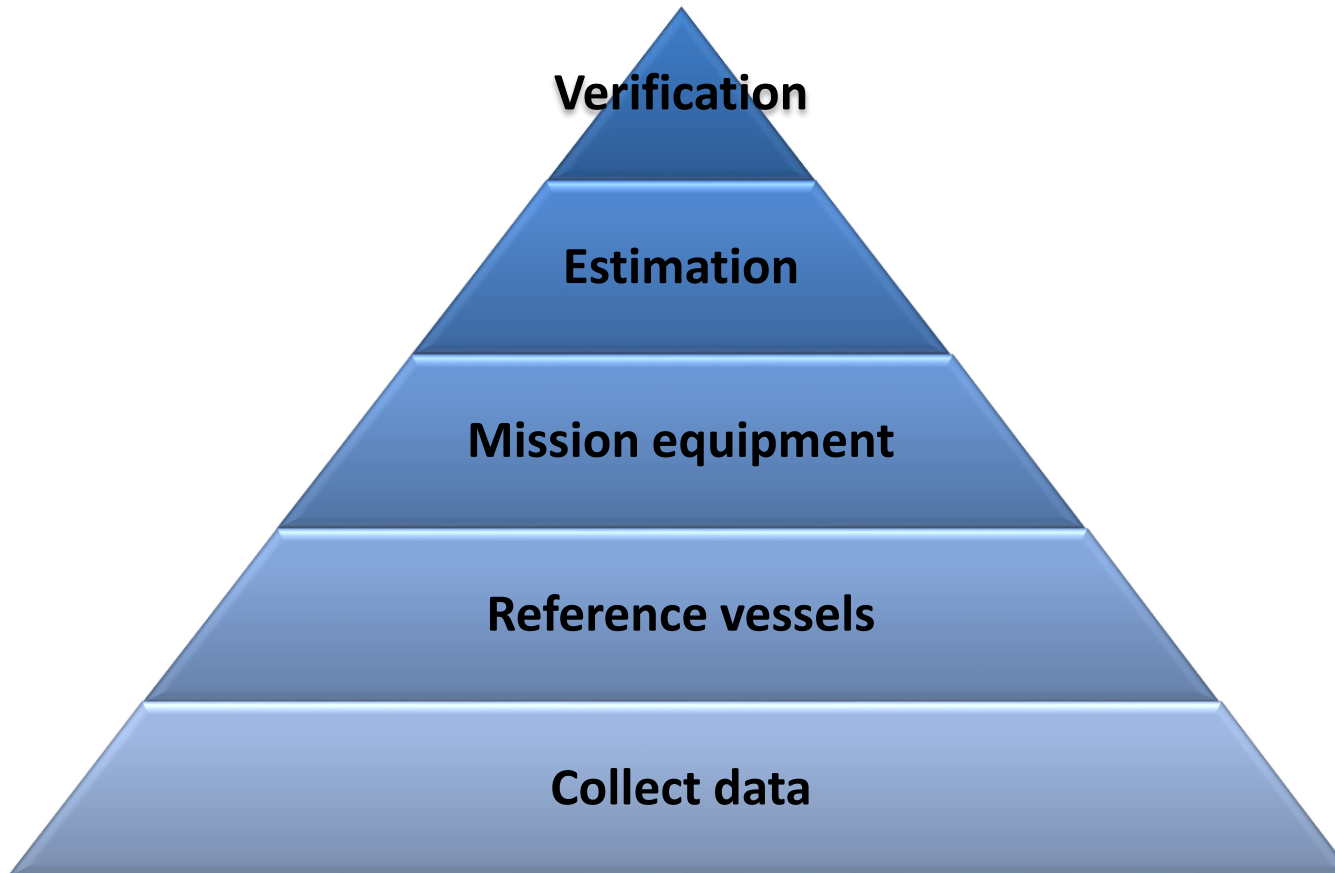
# PROCESSES

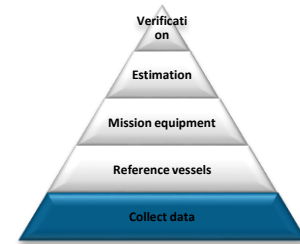




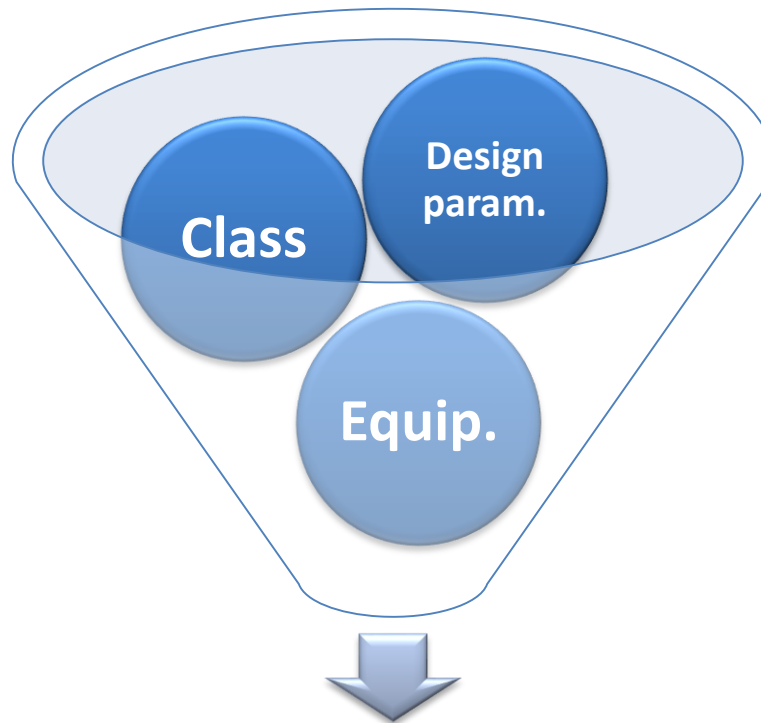
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# WEIGHT ESTIMATION PYRAMID

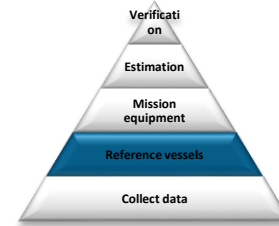




# COLLECT DATA



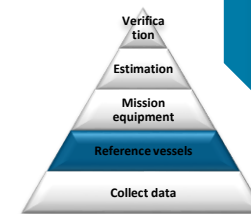
**Base for estimation**



# REFERENCE VESSELS

- Main dimensions
- Class
- Type of operation
- Type of equipment
- Arrangement



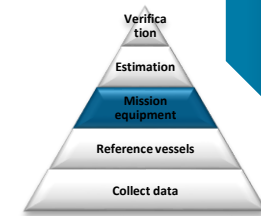


# SIMILARITIES AND DIFFERENCES

## SX121



# MISSION EQUIPMENT



Equipment database

E1.6

▼

120t Offshore T

Weight & CoG

UnitWeight [kg]	Weight [kg]	VCG [m]	LCG [m]
285000.000	285000.000	19.100	19.450

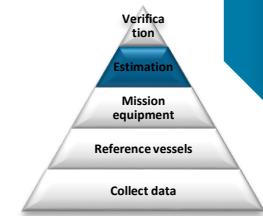
Table view

WgtGrp	Description	UnitWeight [kg]
» E1.6	120t Offshore TTS backpack ...	285000.000
E1.6	10t Deck crane	20000.000
E2.9.3.1	Umbilical winch, mobile - 12 T...	27500.000
E2.9.3.1	A-frame - 12/20 T...	19775.000
E2.9.3.1		
E2.9.3.1		

Items

Items

# ESTIMATION

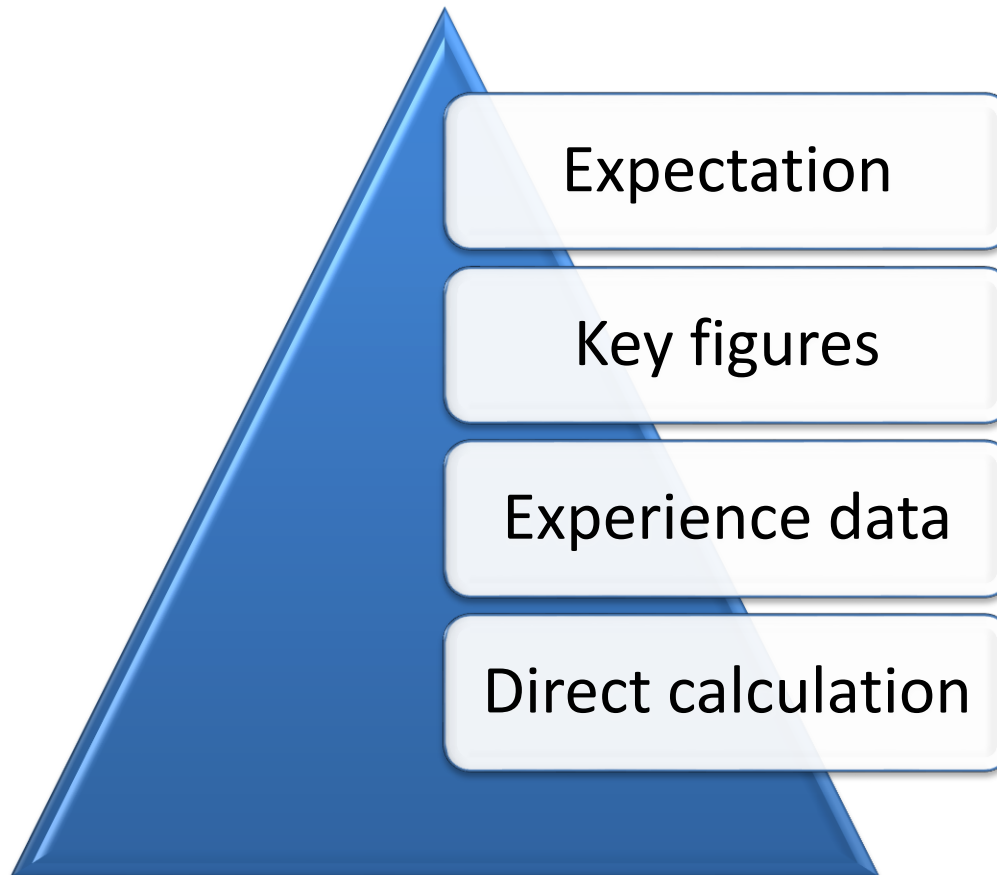
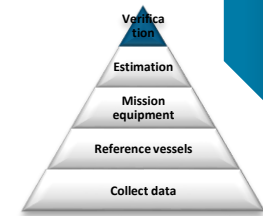


Estimation  
methods

- Predefined
- Main parameters
- User defined

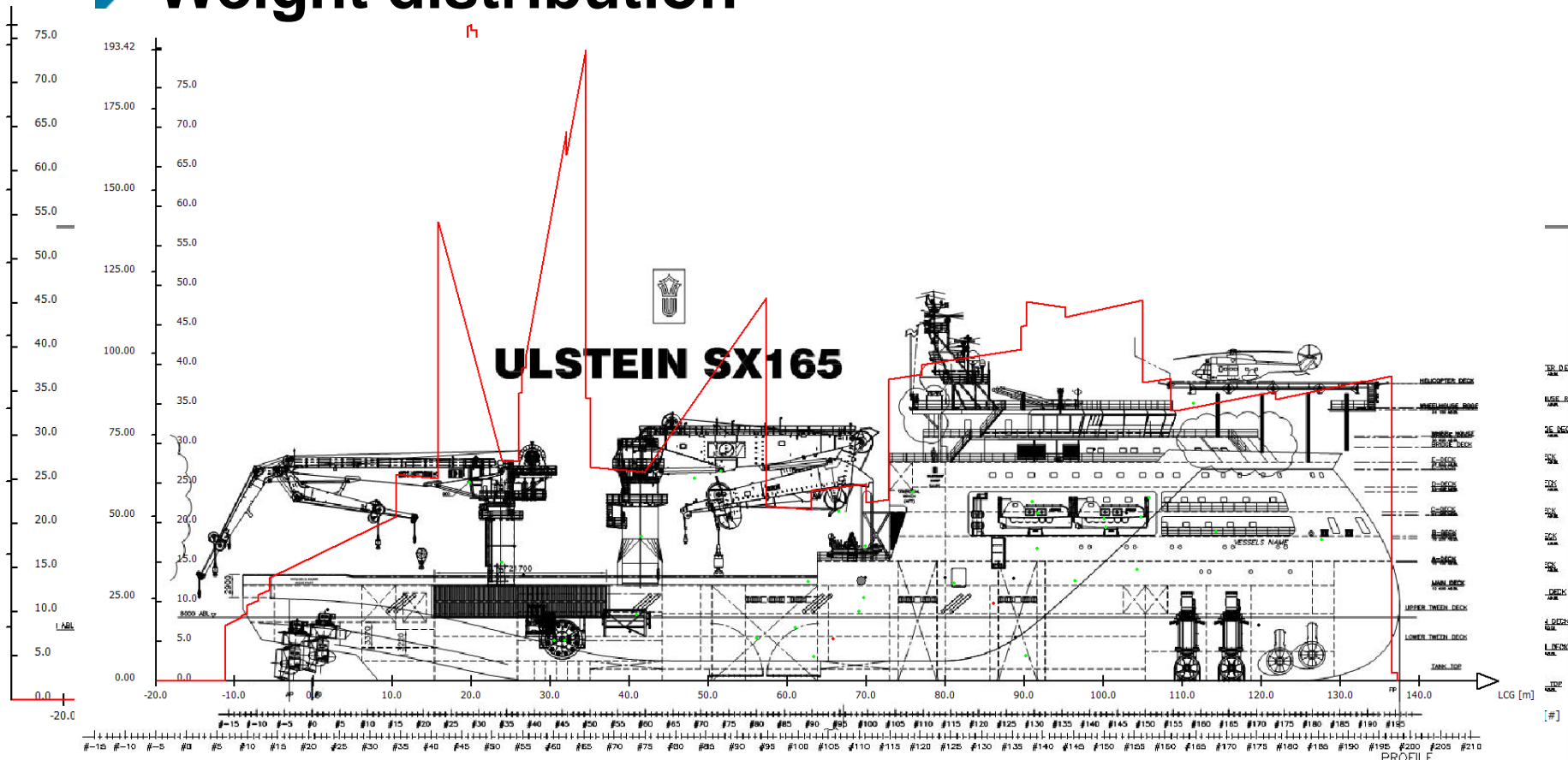


# VERIFICATION



# REPORT

- **Weight and CoG for vessel**
  - Weight and CoG for weight groups
- **Weight distribution**





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# CHALLENGES

**Historical database**

**New design**

**Design changes**

**Detail estimation**

**Center of Gravity**

**Deadlines**



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# ► SUMMARY

WEIGHT ESTIMATION

HISTORICAL DATABASE

COLLECT DATA

VERIFICATION

COST AND CAPACITY



QUESTIONS?



# CONNECT WITH US!



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Ulstein



**ULSTEIN®**

turning  
visions  
into  
reality

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