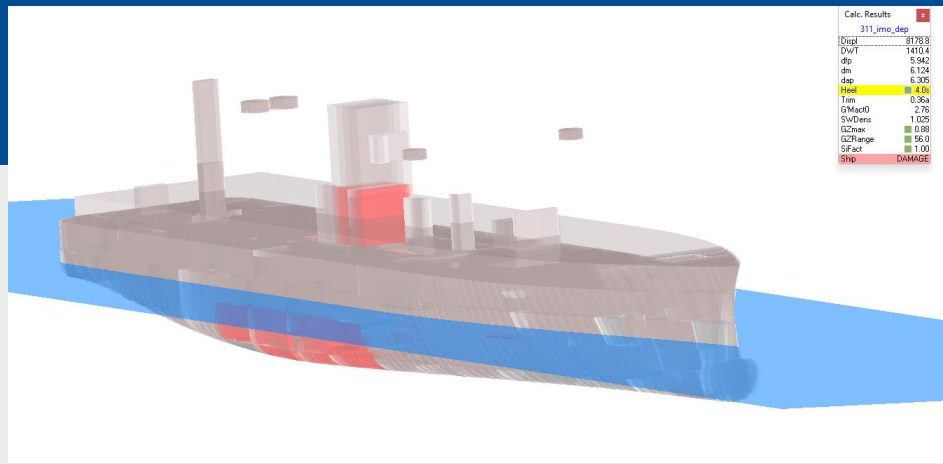
The LOADMASTER X5-SRtP Loading Computer



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Naval Architect

KOCKUMATION GROUP

Kockum Sonics POLARMARINE Texon

Why is a SRtP-compliant Loading Computer needed?

The Safe Return to Port regulations were implemented by SOLAS due to:

- **A history of incidents on passenger ships with severe consequences**
- **Increasing size of vessels and number of passengers**
- **More remote and exposed operational patterns**
- **The risks associated with lifeboat evacuation**

The regulation that started it all

SOLAS Reg. II-1 / 8-1.3

For the purpose of providing operational information to the Master for safe return to port after a flooding casualty,

- Passenger ships constructed (keel laid) **after 1 January 2014** shall have:

  - **Onboard Stability computer; OR**
  - **Shore-based support**

based on guidelines in MSC Circulars 1400, 1532

Passenger ships constructed **before** 1 January 2014 shall comply with above not later than the first renewal survey after **1 January 2025**

What's the best choice?

Regulations state that Shore Based Support (ERS) must be operational within 1 hour

The safe & reliable solution:

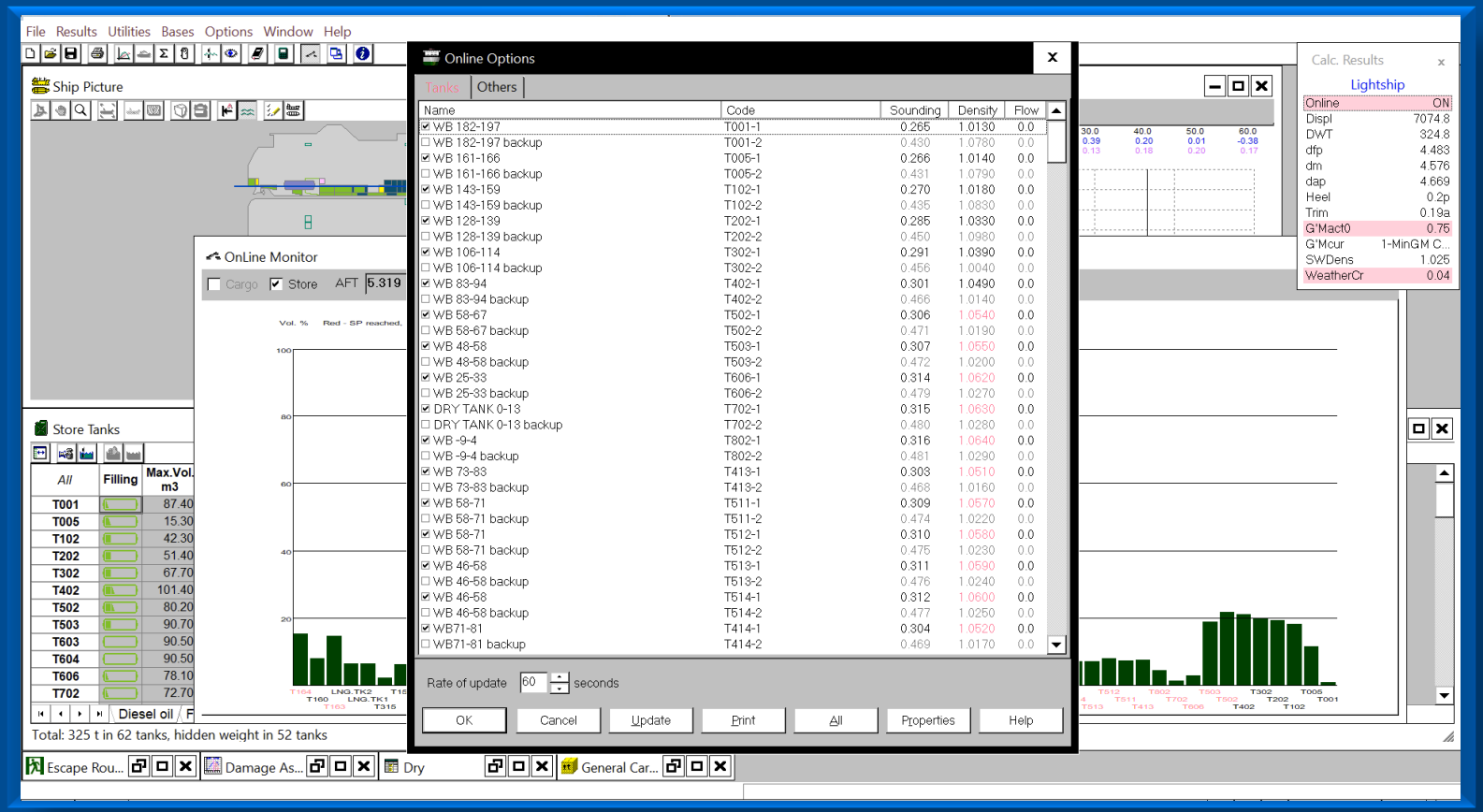
- **A SRtP-compliant Onboard Loading Computer for instant access to stability evaluation**

and for additional guidance from experts

- **Emergency Response Service, utilizing the latest stability data from the loading computer**

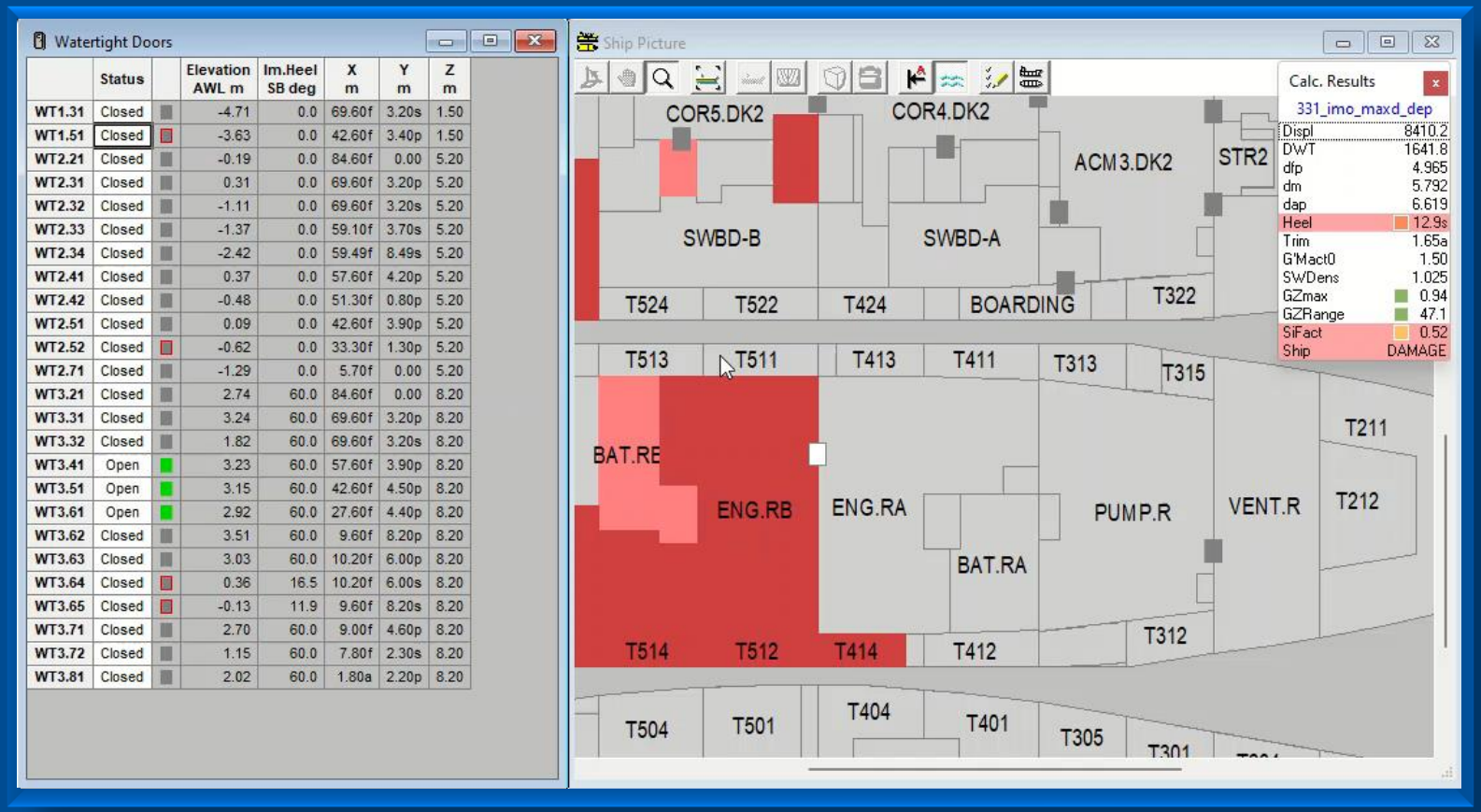
The LOADMASTER X5 - SRtP

- 3D model of hull and all compartments
- Accurate calculation based on any condition and combination of damaged compartments
- “Open to Sea” or “Fixed Volume” damage
- Possible to input damage description manually or with imported data from flooding detection system



The LOADMASTER X5 - SRtP

- Effects of open/closed Watertight doors included in calculations
- Status of all Emergency escape routes
- All internal connections defined for progressive flooding

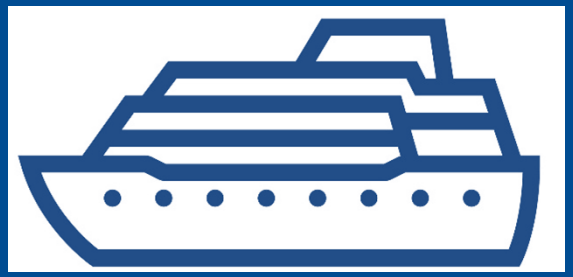


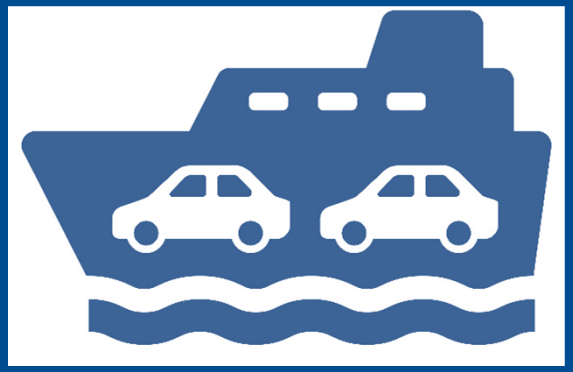
	Status		Elevation AWL m	Im.Heel SB deg	X m	Y m	Z m
WT1.31	Closed		-4.71	0.0	69.60f	3.20s	1.50
WT1.51	Closed		-3.63	0.0	42.60f	3.40p	1.50
WT2.21	Closed		-0.19	0.0	84.60f	0.00	5.20
WT2.31	Closed		0.31	0.0	69.60f	3.20p	5.20
WT2.32	Closed		-1.11	0.0	69.60f	3.20s	5.20
WT2.33	Closed		-1.37	0.0	59.10f	3.70s	5.20
WT2.34	Closed		-2.42	0.0	59.49f	8.49s	5.20
WT2.41	Closed		0.37	0.0	57.60f	4.20p	5.20
WT2.42	Closed		-0.48	0.0	51.30f	0.80p	5.20
WT2.51	Closed		0.09	0.0	42.60f	3.90p	5.20
WT2.52	Closed		-0.62	0.0	33.30f	1.30p	5.20
WT2.71	Closed		-1.29	0.0	5.70f	0.00	5.20
WT3.21	Closed		2.74	60.0	84.60f	0.00	8.20
WT3.31	Closed		3.24	60.0	69.60f	3.20p	8.20
WT3.32	Closed		1.82	60.0	69.60f	3.20s	8.20
WT3.41	Open		3.23	60.0	57.60f	3.90p	8.20
WT3.51	Open		3.15	60.0	42.60f	4.50p	8.20
WT3.61	Open		2.92	60.0	27.60f	4.40p	8.20
WT3.62	Closed		3.51	60.0	9.60f	8.20p	8.20
WT3.63	Closed		3.03	60.0	10.20f	6.00p	8.20
WT3.64	Closed		0.36	16.5	10.20f	6.00s	8.20
WT3.65	Closed		-0.13	11.9	9.60f	8.20s	8.20
WT3.71	Closed		2.70	60.0	9.00f	4.60p	8.20
WT3.72	Closed		1.15	60.0	7.80f	2.30s	8.20
WT3.81	Closed		2.02	60.0	1.80a	2.20p	8.20

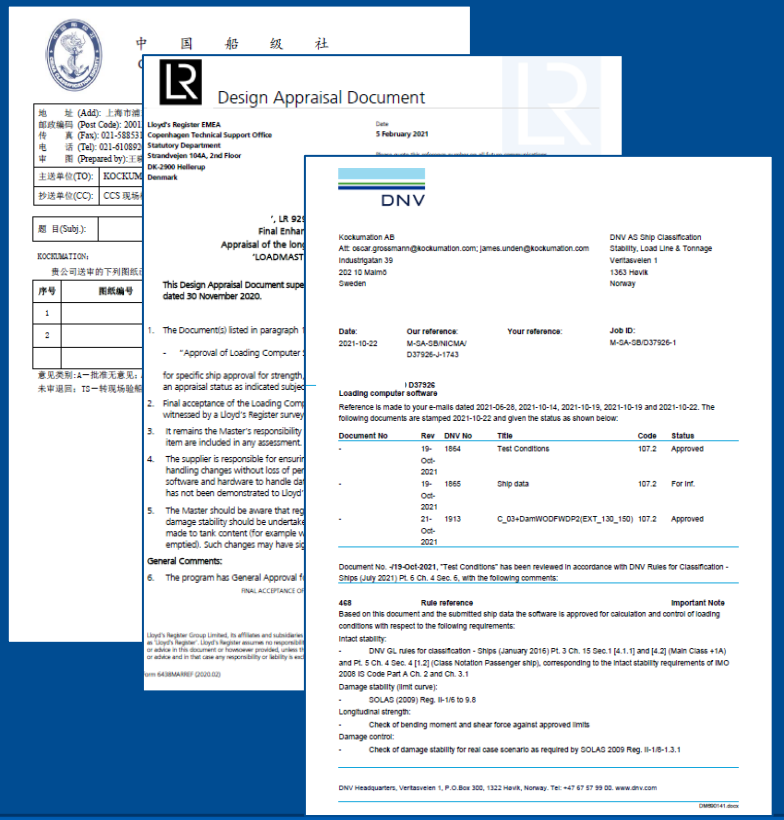
Displ	8410.2
DWT	1641.8
dfp	4.965
dm	5.792
dap	6.619
Heel	12.9s
Trim	1.65a
G'Mact0	1.50
SWDens	1.025
GZmax	0.94
GZRange	47.1
SiFact	0.52
Ship	DAMAGE

The LOADMASTER X5 - SRtP

- For RoPAX vessels – “Water on Deck” calculation according to Stockholm Agreement
- Clear & Accessible reports. Reports and electronic data can be sent to ERS to speed up their assistance.
- The Loadmaster X5 has a strong track record and approvals for SRtP compliance from DNV, LR, CCS.

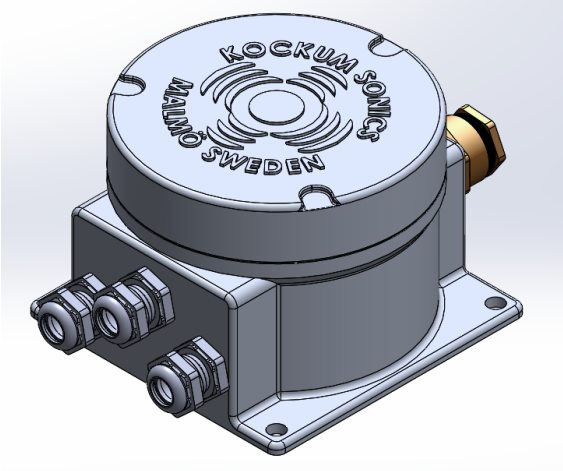


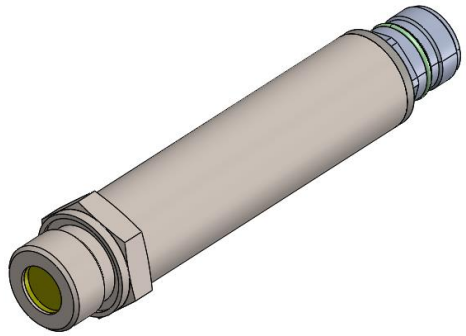




SRtP regulations for the

Flooding Detection System

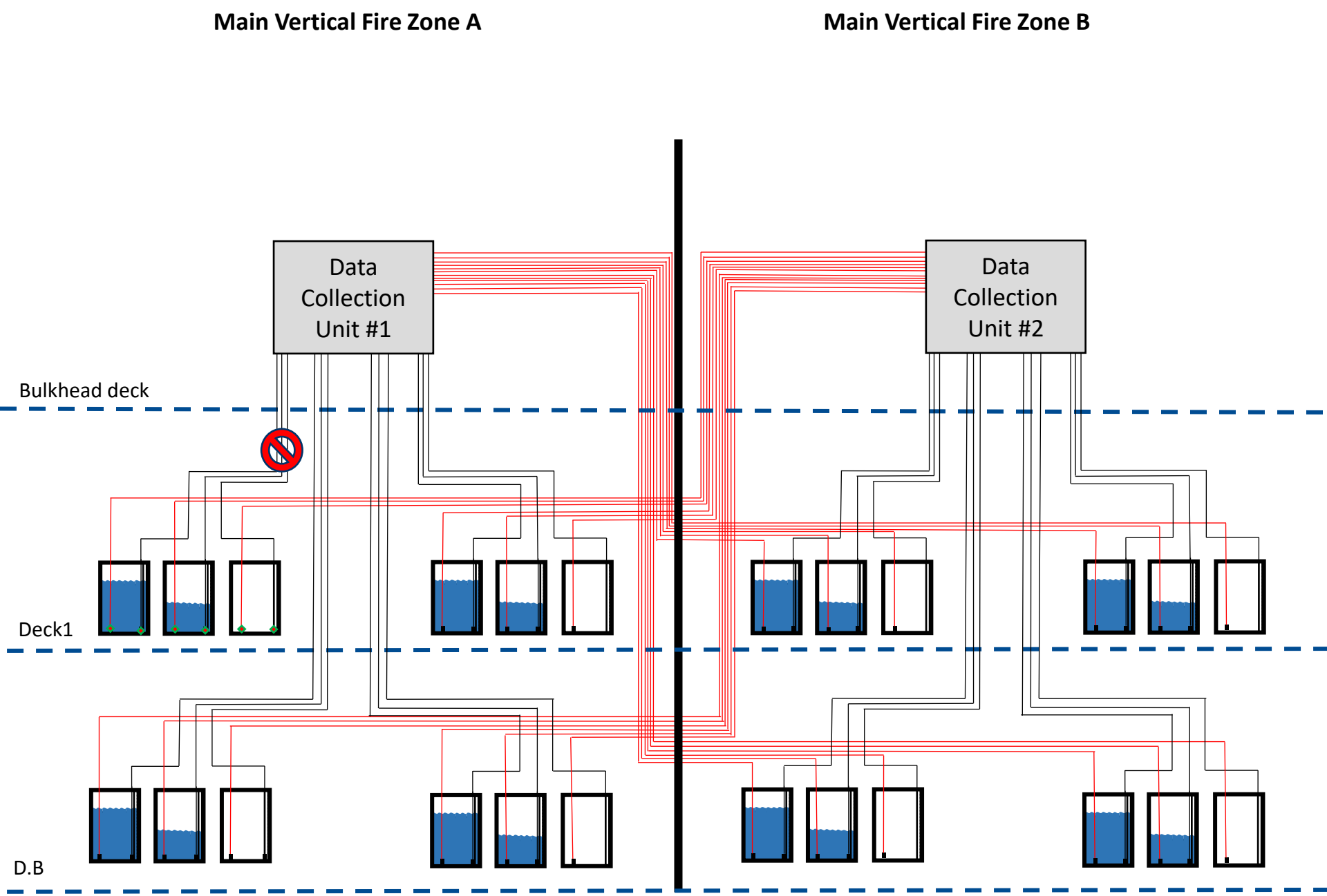




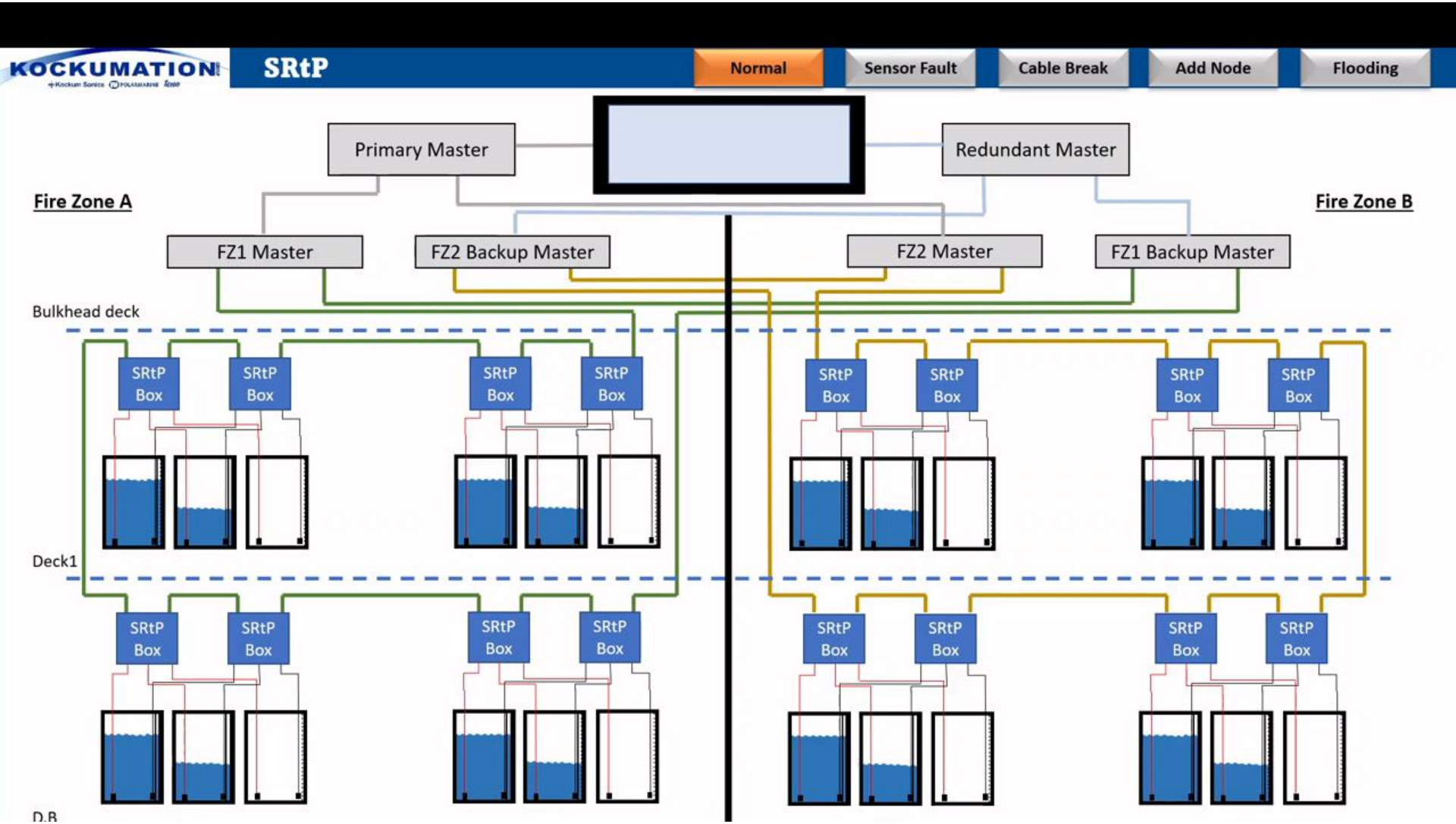
Solving the challenges of SRtP regulations for the Flooding Detection System

- **Combining the LevelMaster SRtP Box and Kockumation sensors reduces the required amount of wiring by ~90% compared with conventional methods.**
- **Flooding detection system may only be lost in spaces directly affected by fire or other damage. All other detectors shall remain operational.**
- **This means that each sensor needs to be connected to two different PLCs above bulkhead deck, dramatically increasing amount of wiring.**

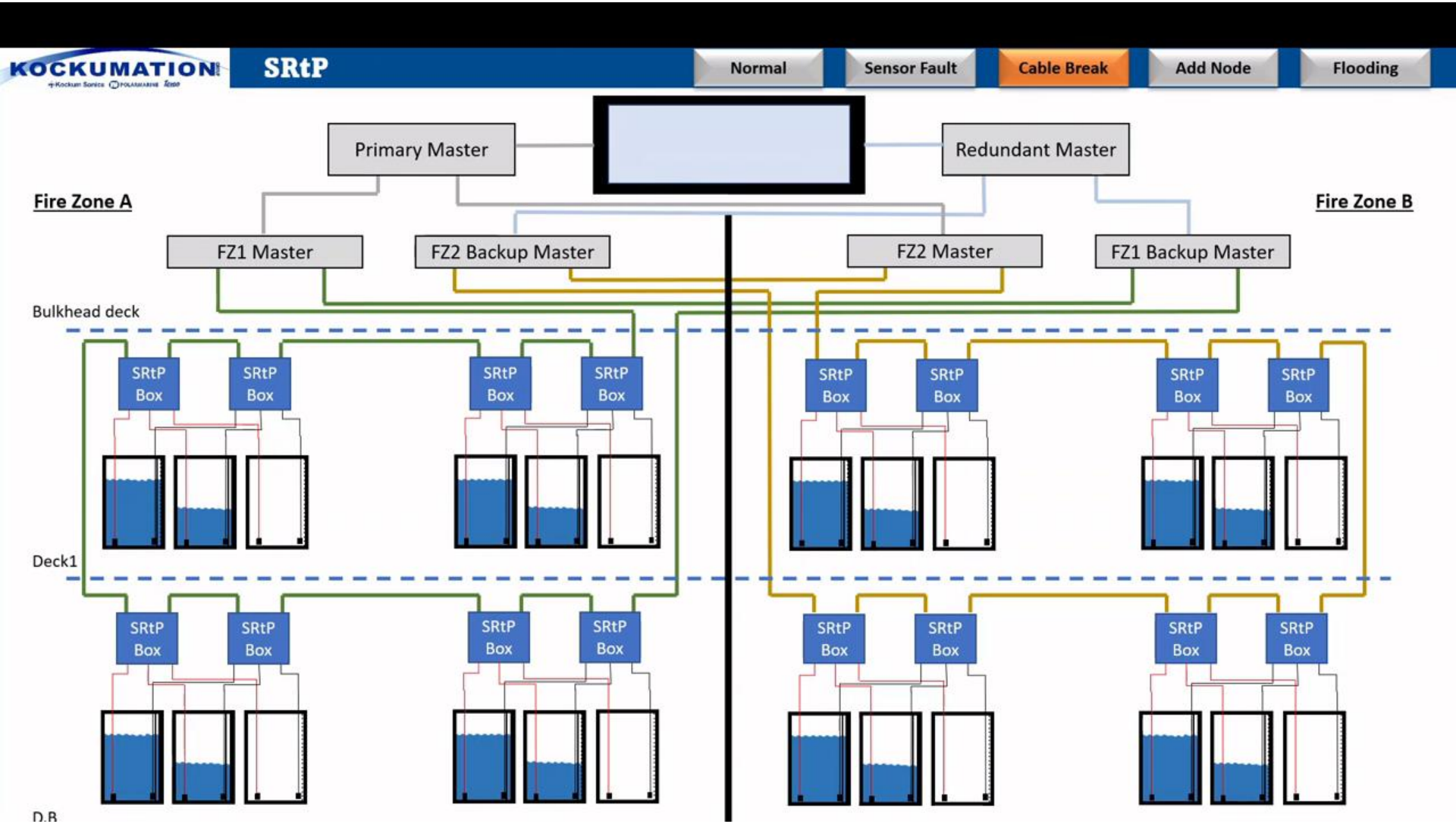
Flooding detection & tank gauging - Conventional approach



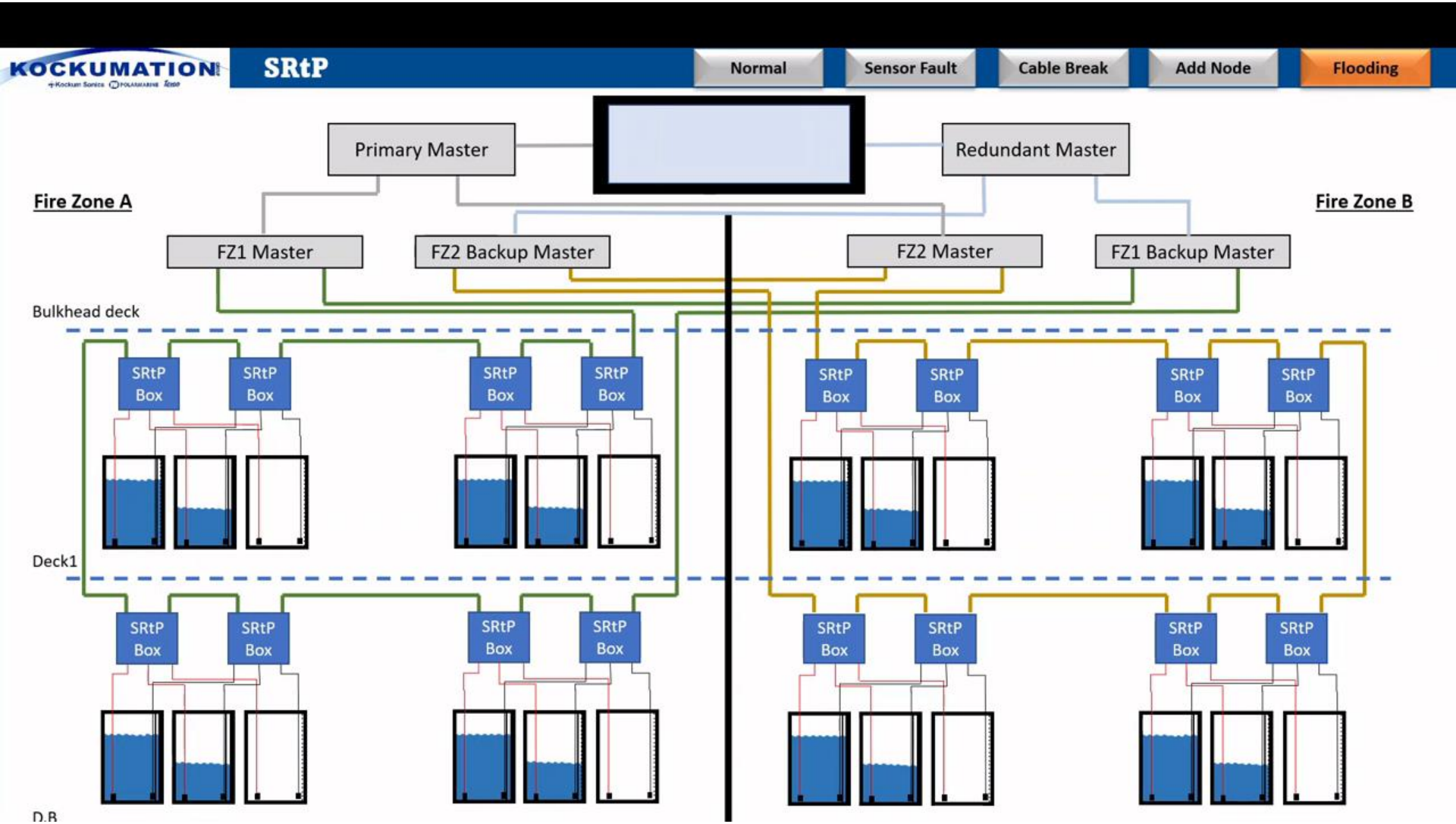
Flooding detection & tank gauging – with SRtP BOX



Flooding detection & tank gauging – with SRtP BOX



Flooding detection & tank gauging – with SRtP BOX



Thank you!

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