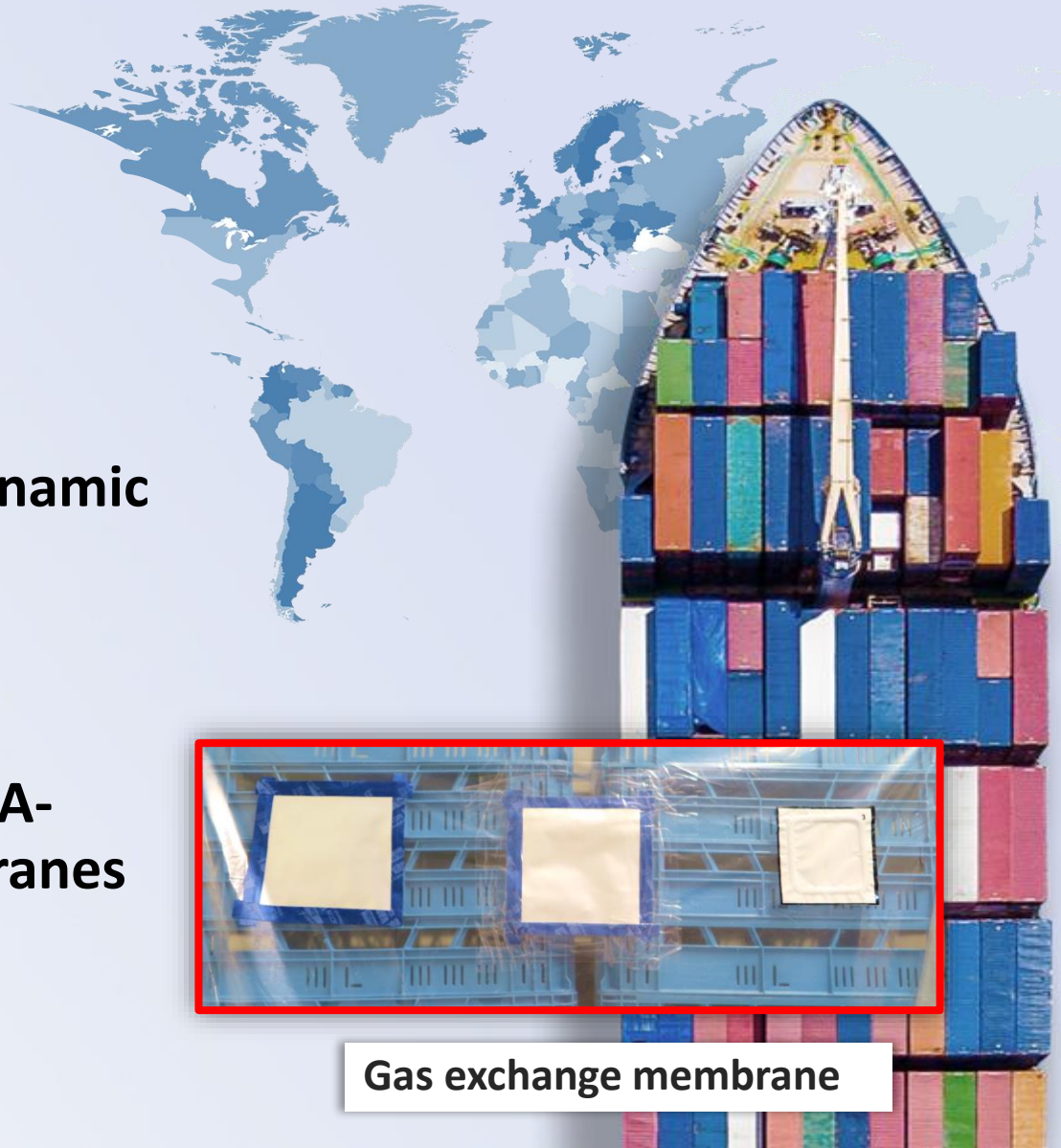
Ship it Fresh

Marketing Concept

The next level of transportation

- Ship It Fresh solution creates the optimum dynamic storage conditions during transportation

- Based on respiration measurement, our SIF emperical model will recommend the initial CA-condition and the opening ratio of the membranes in each unit



Gas exchange membrane

What can SIF bring

Each SIF-unit keeps valuable fruits inside fresh.

Intelligent SIF can control the respiration and lead to:

- **Low dehydration**
- **Limited fungi development**
- **Maintenance of flavor, color, firmness & nutrition**
- **Minimum fruit loss**

For supply chain

- Prevent fruit loss claims
- Reduce extra operation cost
  - Repacking labor cost
  - Energy/machine cost
- Reduce general waste
  - packing materials
  - Fruit damage during extra handling

Timeline

A Harvest & Quality check
B Precooling
C Respiration rate measurement
D Loading per pallet & put on SIF bag
E CA conditioning
F Loading for transportation
G Destination
H Quality check & Repacking
I Distribution
J Consumers

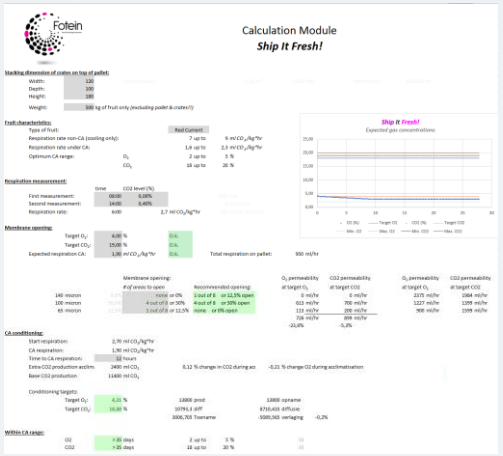
C Respiration rate measurement

Respiration box

D Loading per pallet & put on SIF bag

Impulse Sealer

E CA conditioning



Emperical model

N_2 cylinder rack or N_2 Generator

N_2 & CO_2 mixing & Injection station

CO_2 cylinder rack

SIF units

SIF empirical model

Fruit characteristics			
Type of fruit		Blueberries	
Respiration rate non-CA (cooling only)		2,8 - 3,4	ml CO_2/kg*hr
Respiration rate under CA		1,4 - 1,8	ml CO_2/kg*hr
Optimum CA range	O_2	2 - 5	%
	CO_2	8 – 12	%

Respiration measurement		
	Time	CO2 level (%)
First measurement	07:00	0,00%
Second measurement	12:12	0,40%
Respiration rate	5:12	3,1 ml CO_2/kg*hr

Membrane opening				
	# of areas to open		Recommended opening	
Membrane A	none	or 0%	none	or 0%
Membrane B	2 out of 8	or 25%	2 out of 8	or 25%
Membrane C	8 out of 8	or 100%	8 out of 8	or 100%

SIF film Characteristics

A unique film recipe:

- Suitable for high air humidity
- Prevent condensation
- Good temperature transmission

Beneficial fruits