

**ALAMARIN-JET**

# ***SIGMA CONTROLS***

**SIGMA technical Specification**



# ***SPECIFICATIONS***

- ✓ Modular and scalable architecture – From single installation up to 4 jets
- ✓ Multiple control stations
- ✓ Multiple control head and arraignment options
- ✓ Flexible BUS architecture - each Jet unit work as an individual BUS node
- ✓ Factory made modular cabling system, no custom cables required
- ✓ Increased Redundancy – Based on individual drivelines and multiple control law levels
- ✓ Easy to approach design
  - ✓ Installation is based on plug'n'play modules
  - ✓ Intuitive walk through commissioning procedure
  - ✓ Simple to use, new High Resolution display with modern UI/UX usability
  - ✓ Easy maintenance
- ✓ New control Intelligent Dynamics features
- ✓ Digital engine interface – Direct digital CAN-CAN Throttle control for responsive throttle management without delays
- ✓ USV Ready – Comprehensive low-level (CAN) and high-level (IP) interfaces with augmented control algorithms and engine management for fast USV deployment
- ✓ Sophisticated diagnostics – Multiple data logging and diagnostic options
- ✓ Intelligent self-monitoring system. Temperature, Pressure and Fluid Levels are continuously monitored





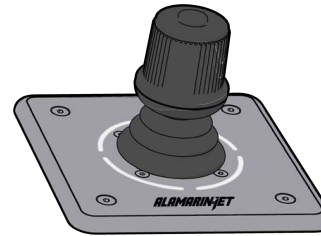
# MAIN COMPONENTS



E-Wheel  
**EWHL**



Twin  
Levers  
**TWL**



3-Axis  
Joystick  
**3XJS**



Computing  
Display Unit  
**CDU**



Helm Control Unit  
**HCU**



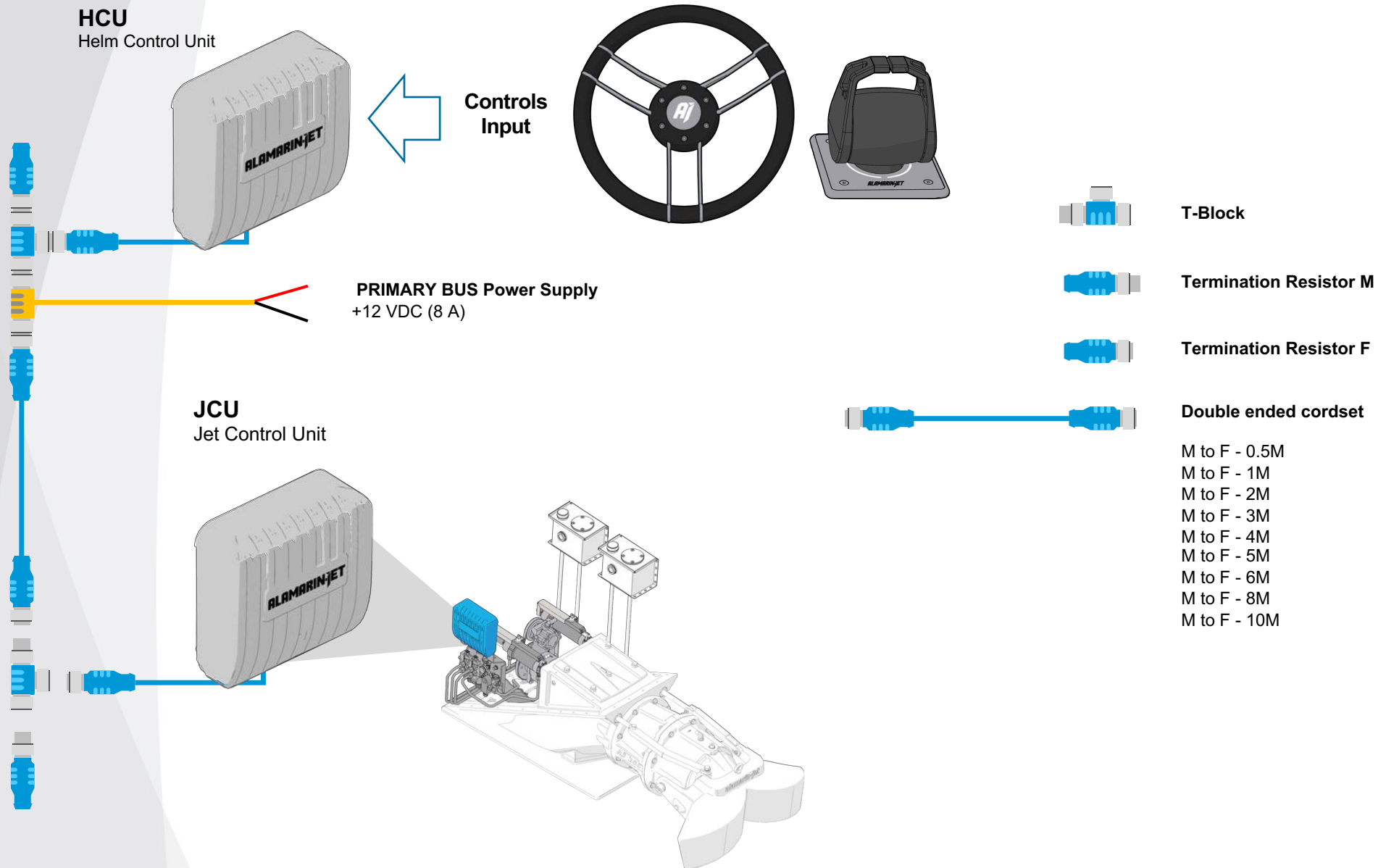
Jet Control Unit  
**JCU**



3XJS Control Unit  
**3CU**

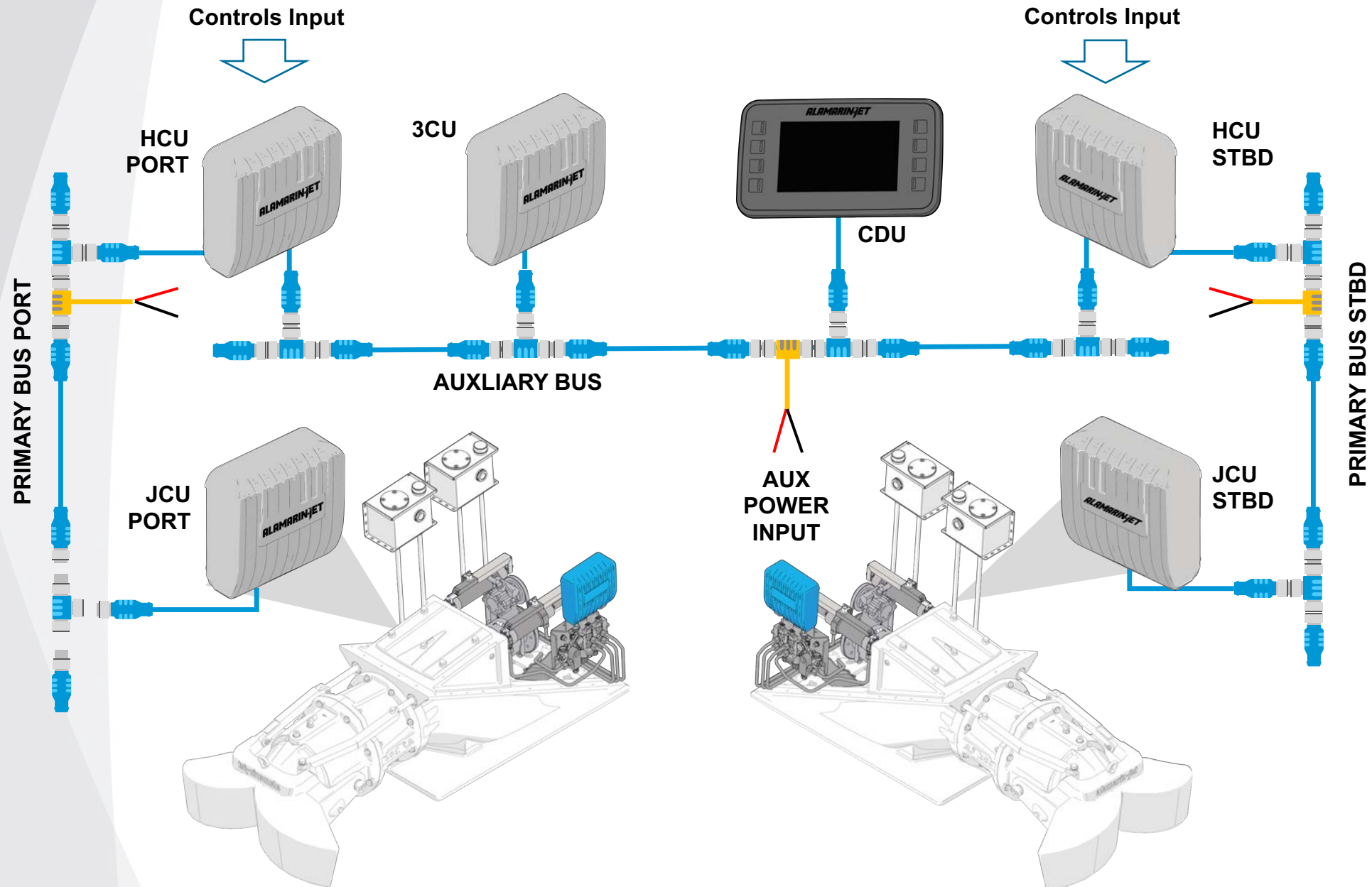


# SIGMA BUS PRINCIPLE



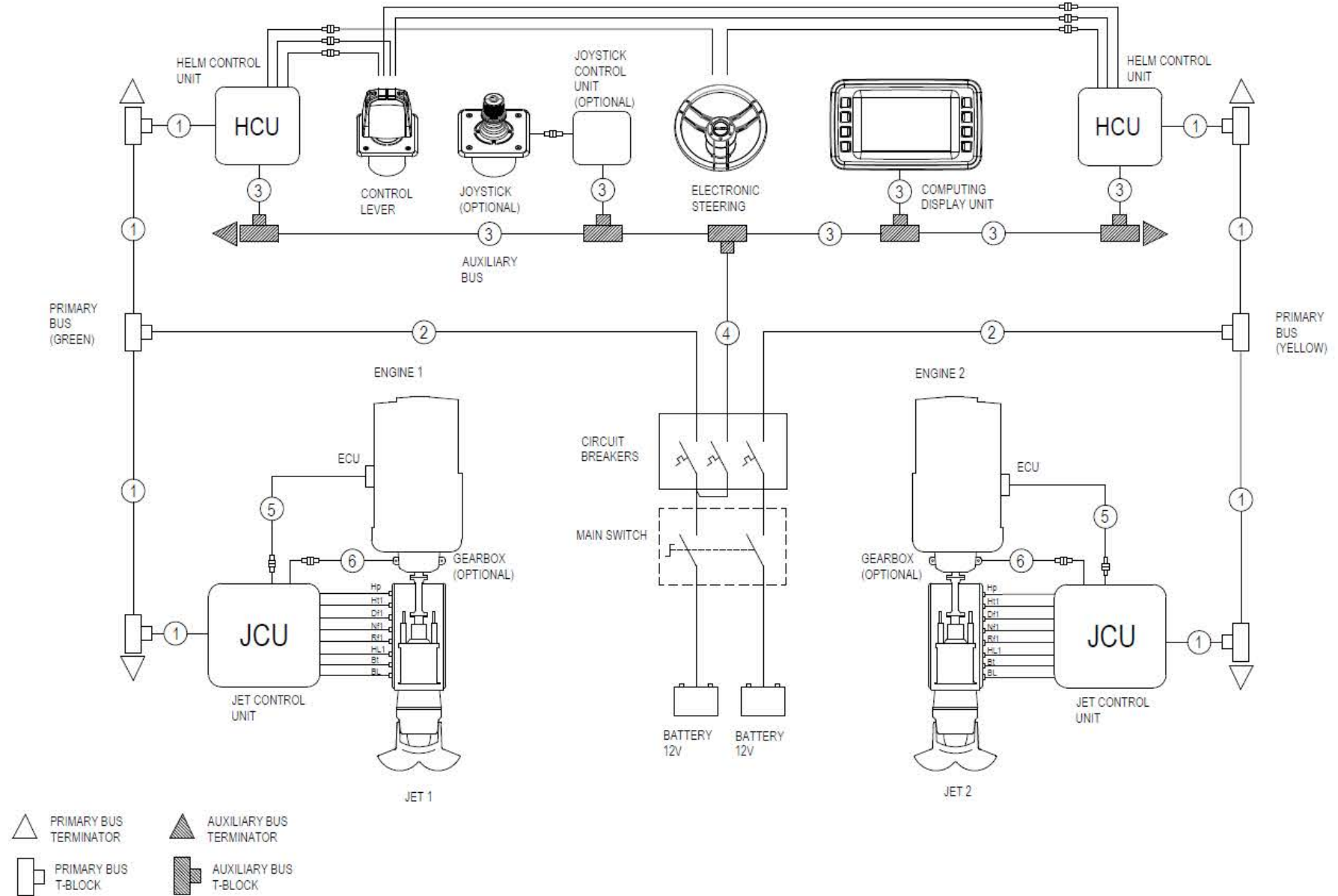


# SIGMA STANDARD TWIN NETWORK



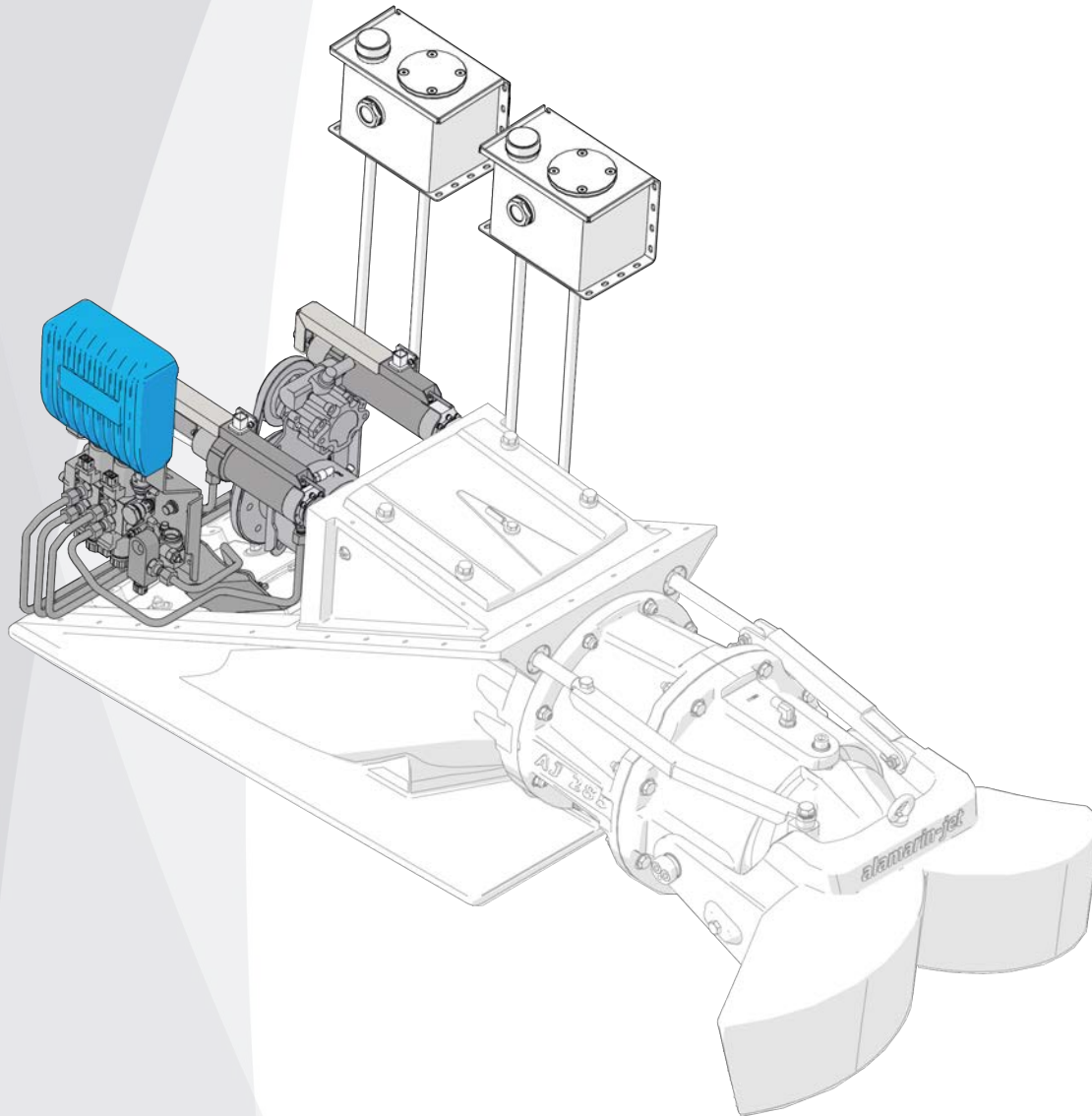


# SAMPLE SYSTEM LAYOUT





# ***SIGMA Integrated Hydraulics Package***



## **Integrated Electro-Hydraulic package**

- ✓ Each SIGMA Equipped Jet will be factory preassembled and tested
- ✓ Each SIGMA –ready jet unit works as a standalone BUS node
- ✓ Power supply and controls through single super robust cabling system
- ✓ Easy to install and service
- ✓ Distributed system increases redundancy
- ✓ Hydraulics can be manipulated manually in the case of emergency

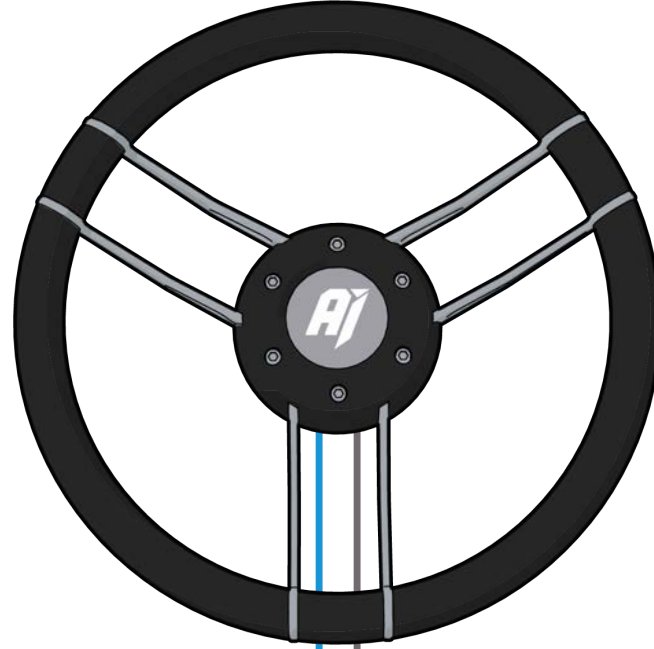


# ***SIGMA Introduction***

## ***E-Wheel***

Absolute Position  
Sensor 1 turn

Dual Output  
Hall Effect sensor



Independent  
Outputs

HCU  
PORT

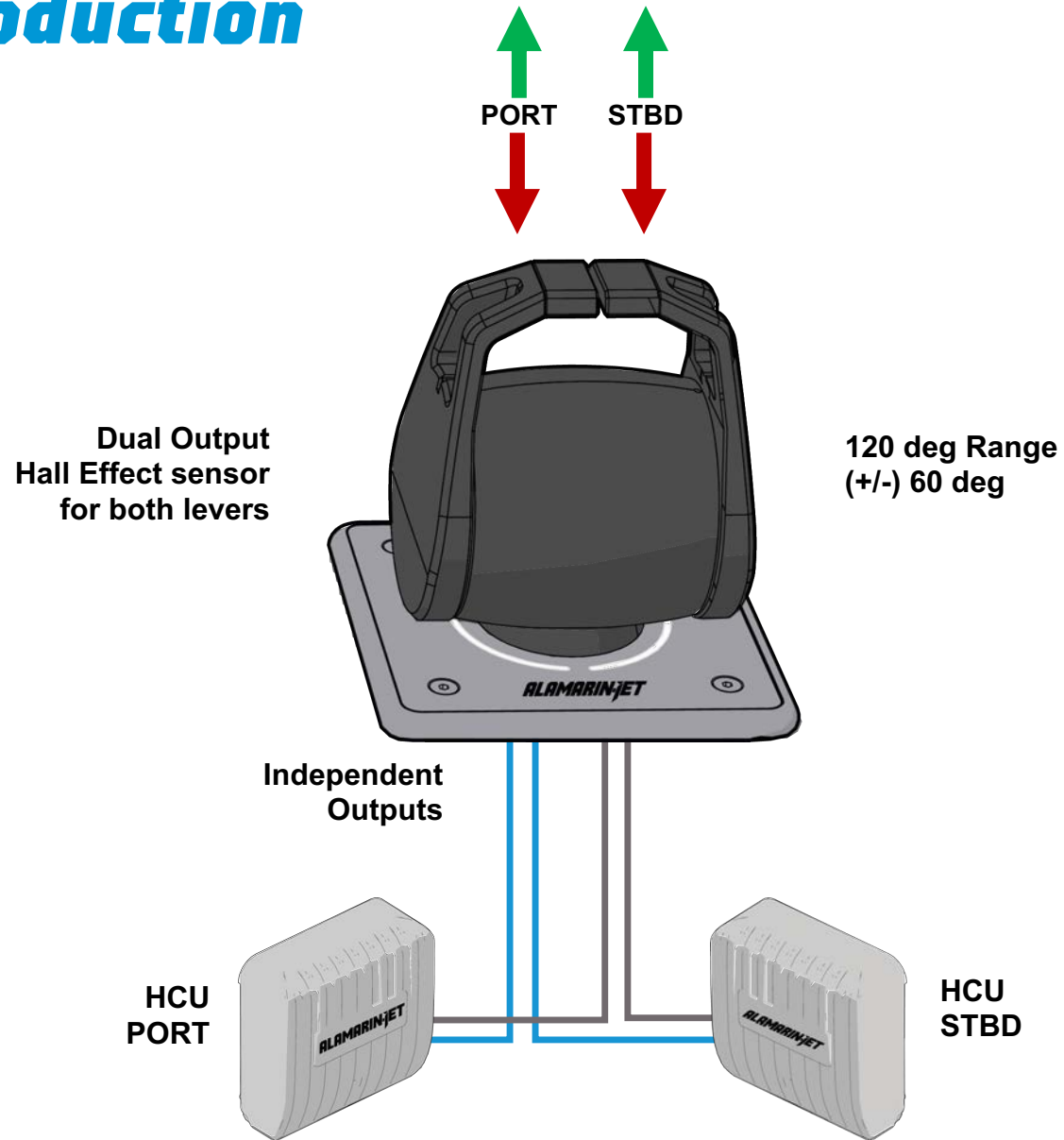


HCU  
STBD





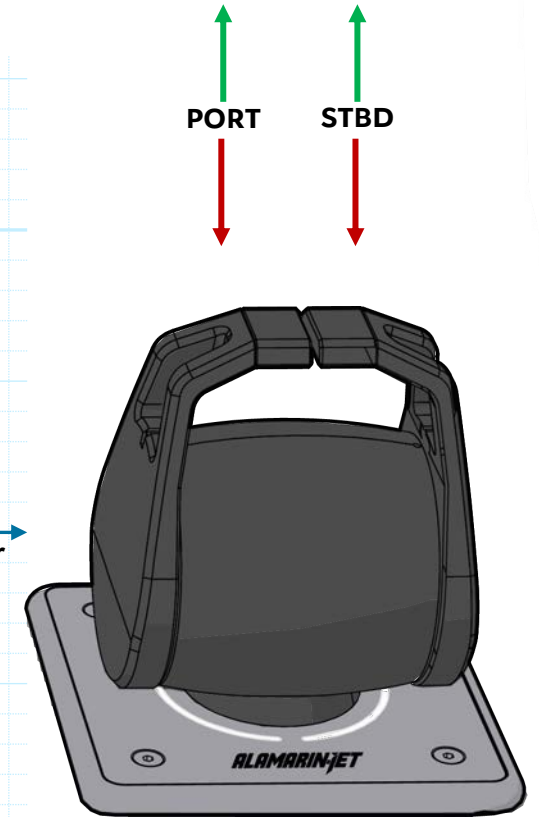
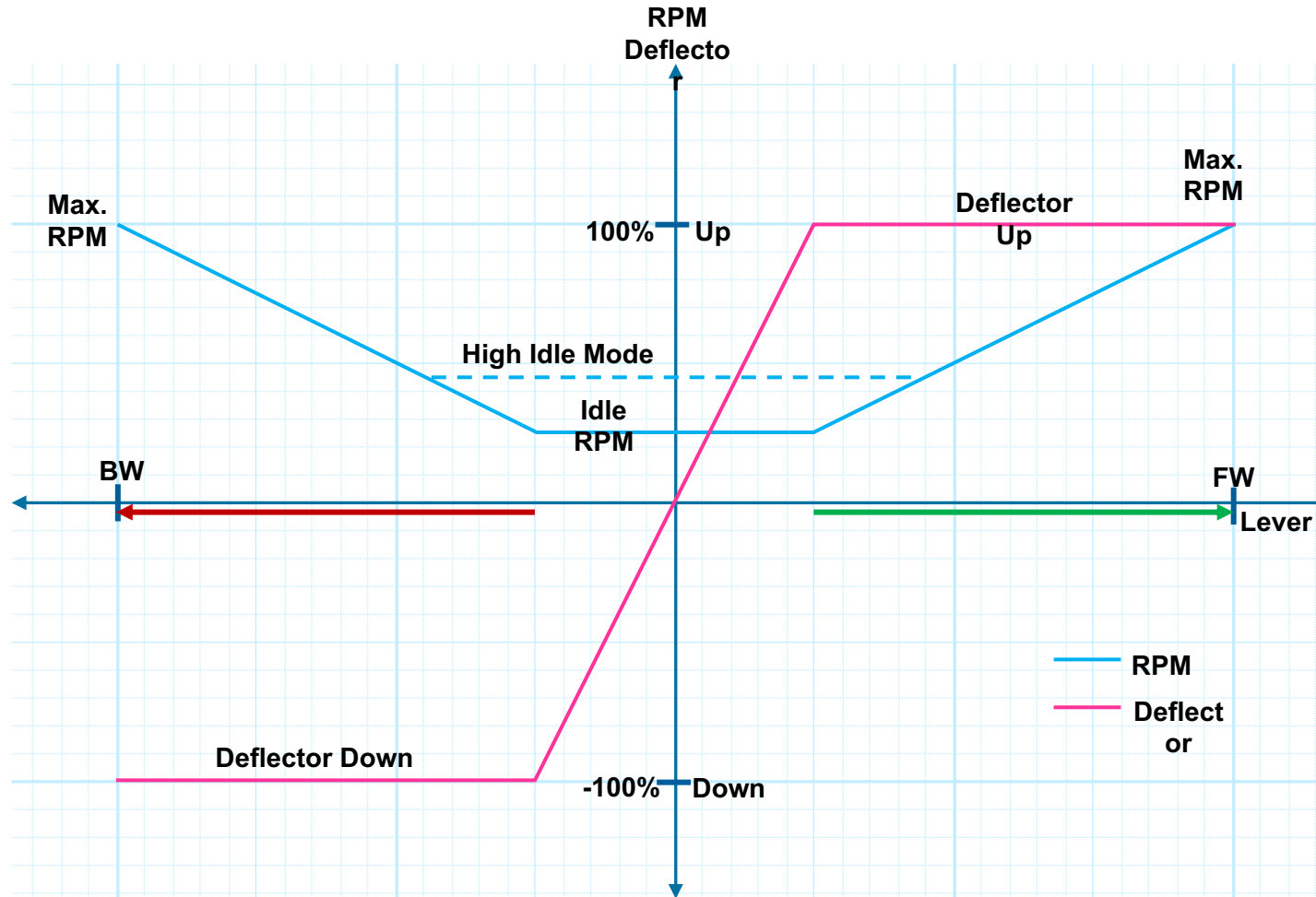
# ***SIGMA Introduction Twin Lever***





# SIGMA Introduction

## Twin Lever

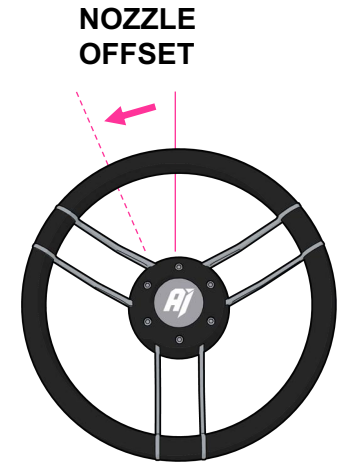
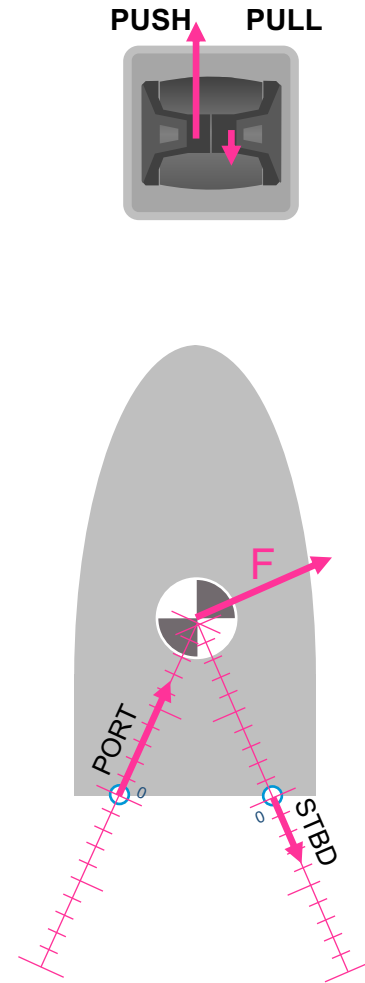
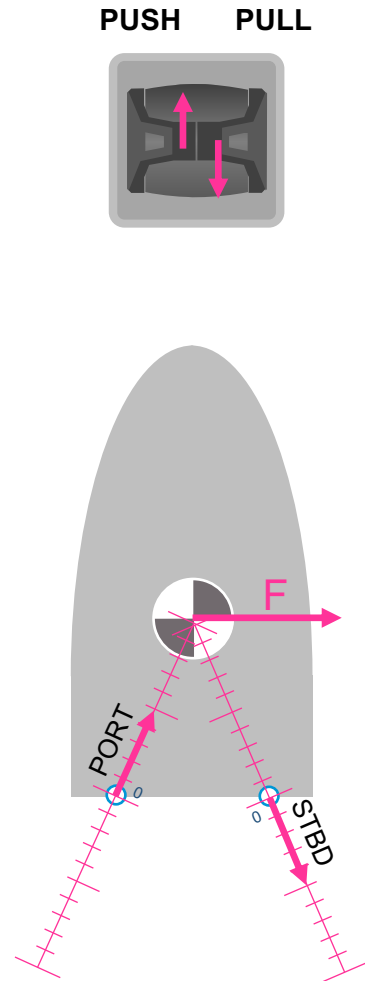
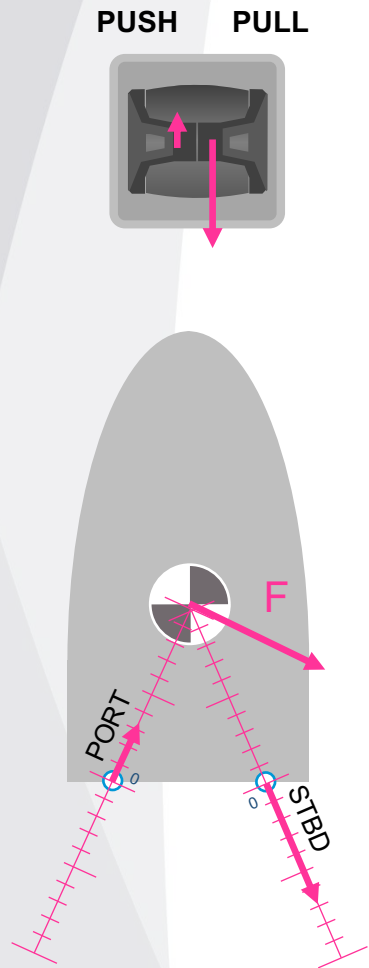




# ***SIGMA Introduction***

## ***Twin Lever Sideways manoeuvring***

***[without 3-axis joystick]***





# ***SIGMA Introduction***

## ***CDU – Computing Display Unit***

- ✓ Robust display with 8 buttons
  - ✓ Change display mode
  - ✓ Adjust brightness
  - ✓ Increase idle
  - ✓ Engage/disengage gears
  - ✓ Activate Intelligent Dynamics Functions
- ✓ Light sensor automatically or manually adjust brightness
- ✓ 3 display modes
  - ✓ PROPULSION
    - ✓ Shaft Speed
    - ✓ Deflector Position
    - ✓ Steering Nozzle Position
  - ✓ NAVIGATION
    - ✓ SOG
    - ✓ Heading
    - ✓ Intelligent Dynamics Functions
  - ✓ DIAGNOSTICS
    - ✓ Hydraulic
    - ✓ Electrical



**PROPULSION**



**NAVIGATION**



**DIAGNOSTICS  
HYDRAULIC**



**DIAGNOSTICS  
ELECTRICAL**



# ***SIGMA Introduction***

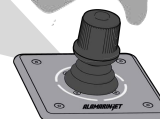
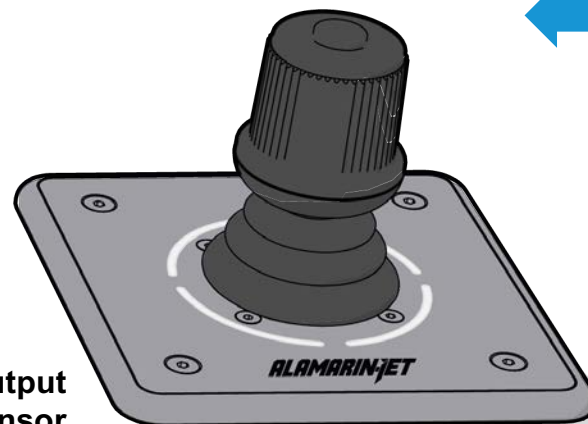
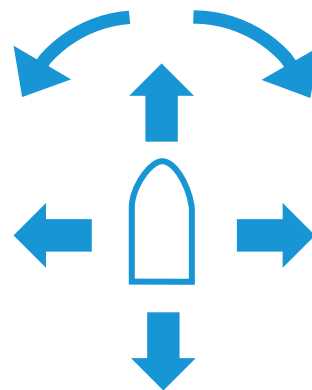
## ***3XJS - 3-axis Joystick***

- ✓ Single handed, intuitive docking
- ✓ Up to 3 additional stations
- ✓ IP68
- ✓ Single CAN cable connection

Dual Output  
Hall Effect sensor  
for all axis

3CU

AUX BUS





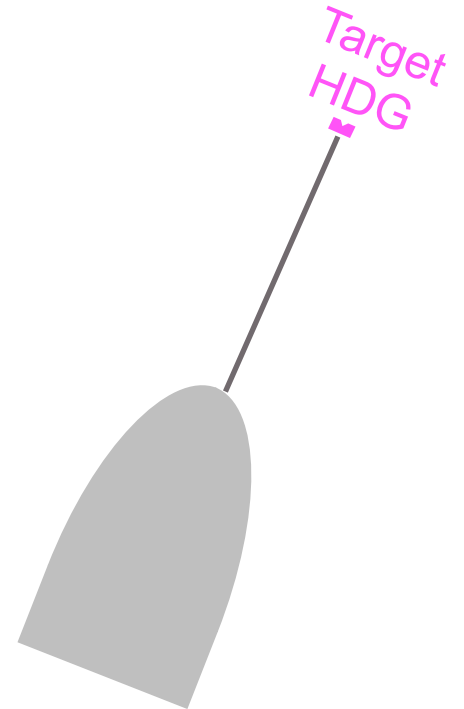
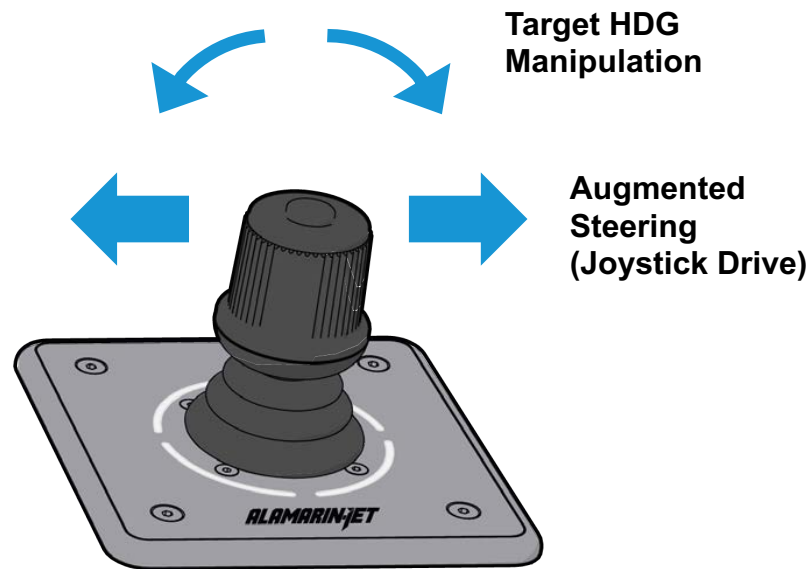
# INTELLIGENT DYNAMICS

## HDG – Intelligent Heading Control

- ✓ Augmented Joystick Driving
- ✓ Easy to adjust locked heading on fly
- ✓ Reduced user load
- ✓ Easy to use



### 3XJS Functions in Intelligent Dynamics Mode





# INTELLIGENT DYNAMICS

## ANC – Intelligent Vessel Anchor



### Virtual Anchoring

- ✓ Minimum RPMs are needed
- ✓ Fuel efficient
- ✓ Bow against the wind
- ✓ Convenient for the crew
- ✓ Ideal for ROV deployment
- ✓ Works also on single jet configuration





***Alamarin-Jet***

***[www.alamarinjet.com](http://www.alamarinjet.com)***

