CERTIFICATE NUMBER	25-0154425-PDA
EFFECTIVE DATE	07-Jan-2025
EXPIRY DATE	06-Jan-2030
ABS TECHNICAL OFFICE	London Engineering Department

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

PRAXIS AUTOMATION TECHNOLOGY B.V.

located at

ZIJLDIJK 24A, , LEIDERDORP, Netherlands, 2352 AB

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product:	**Automation and Controls System**
Model:	**Mega-Guard / Maxi-Guard with compliance of Cyber Security E27IACS UR E27 (Rev.1)**
Endorsements:	**CyberSecurity**
Tier:	**5 - Unit Certification Required**

This Product Design Assessment (PDA) Certificate remains valid until 06/Jan/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Vasileios Vitanopoulos,Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

Sensitivity: Internal & Restricted

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Tier: 5 - Unit Certification Required

Product: **Automation and Controls System**
Model: **Mega-Guard / Maxi-Guard with compliance of Cyber Security E27IACS UR E27 (Rev.1)**
Endorsements: **CyberSecurity**

Intended Service:
Use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

Description:
The Mega-Guard / Maxi-Guard Common Control Platform can be used in different Praxis Automation controller systems, e. g. main engine remote and safety control system, alarm monitoring and control system, power management system, DPS-1 & DPS-2 dynamic positioning systems on vessels with AMS, ACC & ACCU notations and offshore units.

OWS-Operator Work Station for control and graphic presentation, comprising:
• Model 6001 including redundant network interface
• TFT colour Graphic screen, Operator Keyboard
• Engineering Keyboard, Keyboard/Tracker ball
• Ethernet HUB/Router
• Ethernet switches 8-port / 24-port
• 8-Ports Ethernet Switch
• 18-ports Ethernet Switch
• Panel PC 10"
• Panel PC 15.6”
• Panel PC 17"
• Panel PC 19"
• Panel PC 22"
• Panel PC 24”
• Panel PC 26"
• DIN module Media Converter RJ45 <-> Fiber ST
• Trackerball Controller
• Joystick Controller
EAS-Extension Alarm System for the remote alarm indication, Comprising
• Local Operator Panel
• 7" TFT Operator Panel
• Watch Entrance Unit
• Reset Box
• Bedroom Buzzer
PCU/DPU -Process Control Units / Distributed Processing Unit for processing of inputs, outputs, alarms and control loops, comprising:
• Model 6030, 18 x Digital input, 18 x Digital output executed as Din rail model
• Model 6032, 36 x Digital Input unit executed as Din rail model
• Model 6034, 24 x Analog input /mixed input output executed as Din rail model
• Model 6034, Addressable fire alarm input output executed as Din rail model
• HCS Operator Control Panel
• 5. 7” TFT Touch Operator Panel
• Model 6049, Control Processor executed as Din rail model with redundant network interface executed as Din rail model.
Display Panel:
• Serial Interface Converter
• Sensor Supply Module
• Alarm Panel 16 Ch.
• Window Wiper Panel

• Window Wiper I/O Module
• Navigation Lights Panel
• Nav. Lights I/O-module
• Fire Alarm Panel
• LCD Operator Panel
• 8-port NMEA Interface
• DP Thruster Controller
PCS/BMS - Propulsion Control System / Bridge Manoeuvring System comprising:
• All models mentioned under PCU, Bridge/Control Room control Lever and Telegraph Panel
• BMS Telegraph Panel
• Bridge Order Printer Panel
• Telegraph and Safety Panel
• Governor Panel
• 7" TFT Operator Panel
• 7" TFT Operator Panel
• BMS Indication/Command Panel
• Control Lever, Azimuth Lever
• Joystick controller
DPS-1 & DPS-2 Dynamic Positioning System comprising:
• All Modules under OWS & PCU
• 7” TFT Operator Panel
• 7" TFT Operator Panel
• Joystick and Rate of Turn Panel
• MRU
PMS - Power Management System comprising:
• All models as mentioned under PCU
• PMS input/output Din module
• Local Operator Panel
• 7" TFT Operator Panel
• 7" TFT Operator Panel
• Display and Operating module

BNWAS - Bridge Navigational Warning and Alarm System comprising:
• Local Operator Panel & All models under PCU
UPS - 230VAC/24VDC Series UPS comprising:
• Distribution Panel
• Praxis Earth Fault Detection Module
• Phoenix Contact Power Supplies
• UPS Input Module
• UPS Distribution board

Rating:
Power Supply: 230 VAC and 24 VDC

Service Restriction:
1. Unit Certification is required for this product as indicated on ABS Marine Vessels Rules (2025) 4-1-1/table 3 items 32,33,34,35,39. Each installation and individual configuration is to be specifically approved. Mega-Guard / Maxi-Guard can be categorised as either Computer Based Systems category II or III, as indicated on ABS Rules for Building and Classing Marine Vessels Rules (2025) 4-9-3/ 7.1 table 1. Relevant documentation must be available to ABS upon request, as this is mentioned in 4-9-3/8.1.2 Table 2 and 4-9-3 /15 Table 3 , of the ABS Rules for Building and Classing Marine Vessel Rules (2025).
2. A vessel-specific review for compliance with applicable requirements of ABS Marine Vessels Rules (2025) Sections 4-9-3, 4-9-13, and 4-9-14 is still required, to verify project-specific elements such as drive controller type and connection to untrusted networks.

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Tier: 5 - Unit Certification Required

3. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
4. To ensure security, implement physical protection measures, such as lockable doors/ hatches and secure cable management, to prevent unauthorized access to hardware, software, cables, and data. Safeguards must also be in place to prevent changes to the network topology and the connection of unauthorised devices excluded from the PDA.
5. This PDA does not cover the embedded software's functionality, as required by IACS UR E22.
6. This PDA is issued on the contingent that the end user follows the Praxis - Security Configuration Guidelines Rev 2.

7. When using the WebUi the web browser in use must be up to date and be the latest version.
8. Recommended configuration settings of the security capabilities of the device, and specific default values must be provided at the time of the integration.
9. When the system is used as part of an ACC, ACCU, ABCU, DPS-2, DPS-3 notation, Failure modes and effect analysis is to be submitted for review as per ABS Marine Vessel Rules (2025), 4-9-1,7.3.5

Comments:
1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. ABS Engineering must review any modification to the hardware, software, or firmware that might significantly impact the performance of the cyber resilience capabilities
3. The system doesn't have Bluetooth / Wireless capability, so this PDA does not cover this aspect of the service requirements.

Notes/Drawing/Documentation:
Cyber Security Documents:
Drawing No. 01, 01. CBS asset inventory (E27 sec.3.1.1) - CBS Asset Inventory R01, Revision: 1, Pages: 2
Drawing No. 02. Topology diagrams (E27 sec.3.1.2) - Mega-Guard System Topology R01, 02. Topology diagrams (E27 sec.3.1.2) - Mega-Guard System Topology R01, Revision: 1, Pages: 10
Drawing No. 03. Description of security capabilities (E27 sec.3.1.3) - Description of Security Capabilities R01, 03. Description of security capabilities (E27 sec.3.1.3) - Description of Security Capabilities R01, Revision: 1, Pages: 44
Drawing No. 04. Test procedure for security capabilities (E27 sec.3.1.4) - R02, 04. Test procedure for security capabilities (E27 sec.3.1.4) - R02, Revision: 2, Pages: 59
Drawing No. 05. Security configuration guidelines (E27 sec.3.1.5) - Security configuration guidelines R02, 05. Security configuration guidelines (E27 sec.3.1.5) - Security configuration guidelines R02, Revision: 2, Pages: 27
Drawing No. 06. Secure development lifecycle (E27 sec.3.1.6) - WI - PI - 02 - Development Guidelines_Rev12, 06. Secure development lifecycle (E27 sec.3.1.6) - WI - PI - 02 - Development Guidelines_Rev12, Revision: 12, Pages: 32
Drawing No. 07. Plans for maintenance and verification (E27 sec.3.1.7)-Plans for maintenance and verification R01, 07. Plans for maintenance and verification (E27 sec.3.1.7)-Plans for maintenance and verification R01, Revision: 1, Pages:12
Drawing No. 08. Information supporting incident response and recovery plan-Recovery Plan R1.2, 08. Information supporting incident response and recovery plan-Recovery Plan R1.2, Revision: 1.2, Pages: 11
Drawing No. 09. Management of change plan (E27 sec.3.1.9) - WI - PI - 02 - Development Guidelines_Rev12, 09. Management of change plan (E27 sec.3.1.9) - WI - PI - 02 - Development Guidelines_Rev12, Revision: 12, Pages: 32
Drawing No. 10. Test reports (E27 sec.3.1.10) - Test procedure for security capabilities R02 - Report 24-06-2024, 10. Test reports (E27 sec.3.1.10) - Test procedure for security capabilities R02 - Report 24-06-2024, Revision: 2, Pages: 59
Drawing No. , UR E27 - Document Index - Rev.1, Revision: , Pages: 2
Drawing No. TEST REPORT BV, UR_E27_FAT_Protocol_Rev0.5_Bureau_Veritas_Signed_20240627, Revision: 1, Pages:19
Drawing No. TEST REPORT LRS, IACS UR E27 - Test procedure for security capabilities R03 - LRS Signed 03092025, Revision: 1, Pages: 57

System Documentation
Drawing No. PTD_Mega-Guard_E-PCS-CPP_xxxxx_Rev3.10, PTD_Mega-Guard_E-PCS-CPP_xxxxx_Rev3.10, Revision: 3.10, Pages: 46

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Tier: 5 - Unit Certification Required

Drawing No. PTD_Mega-Guard_E-PCS-FPP_Rev1.17, PTD_Mega-Guard_E-PCS-FPP_Rev1.17, Revision: 1.17, Pages: 32
Drawing No. PTD-5.7-TFT-Navigation-Light-Control-System-R4.1, PTD-5.7-TFT-Navigation-Light-Control-System-R4.1, Revision: 4.1, Pages:25
Drawing No. PTD-5.7-TFT-Power-Management-System-R3.03, PTD-5.7-TFT-Power-Management-System-R3.03, Revision: 3.03, Pages:95
Drawing No. PTD-5.7-TFT-Window-Wiper-Control-System-R1.000, PTD-5.7-TFT-Window-Wiper-Control-System-R1.000, Revision: 1, Pages: 30

New Equipment Type Test
Drawing No. PDF-TEST-REPORT-1, Type Approval Visual & Performance Test Report - 2023 - R1.00 - Signed, Witnessed BV, Revision: 1, Pages: 9
Drawing No. PRA-20230725-X2-SE, BICON Report v2023060701, BICON Test Lab, Revision: 1, Dated 05-Oct-2025 ,Pages: 35
Drawing No. PRA-20230725-X3-ANS, BICON Report v2023060701, BICON Test Lab, Revision: 1, Dated 16-Oct-2023 ,Pages: 9
Drawing No. BICON Report PRA-20230725-X3-CSD, v2023060701,Bicon Test Lab, Revision: 1,Dated 16-Oct-2023, Pages:12
Drawing No. M23.003-P23.003, Praxis Automation Technology B.V.,Sebert Trillingstechniek B.V. Test Lab Revision: 1, Dated 01-Sep-2023, Pages: 23
Drawing No. PDF-TEST-REPORT-6, Type Approval Damp Heat Test Report - 2023 - R1.10 - Signed, Witnessed BV, Revision: 1, Pages: 10
Drawing No. PDF-TEST-REPORT-7, Type Approval Dry Heat Test Report - 2023 - R1.10 - Signed, Witnessed BV, Revision: 1, Pages: 10
Drawing No. PDF-TEST-REPORT-8, Type Approval EMC Test Report - 2023 - v1.10 - Signed, Witnessed BV, Revision: 1, Pages: 52
Drawing No. PDF-TEST-REPORT-9, Type Approval Inclination Test Report - 2023 - R1.00 - Signed, Witnessed BV, Revision: 1, Pages:8
Drawing No. PDF-TEST-REPORT-10, Type Approval Low Temperature Test Report - 2023 - R1.10 - Signed, Witnessed BV, Revision: 1, Pages: 10
Drawing No. PDF-TEST-REPORT-11, Type Approval Power Failure and Variation Test Report - 2023 - R1.00 - Signed, Witnessed BV, Revision: 1, Pages: 11
Drawing No. PDF-TEST-REPORT-12, Type Approval Test Schedule - 2023 - R1.10 - Signed, Revision: 1, Pages:36

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 06/Jan/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
2025 ABS Rules for Conditions of Classification: 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2025 Marine Vessel Rules: 4-9-1/7.3.3, 4-9-2/3.1.1, 4-9-2/3.1.2, 4-9-2/3.1.3, 4-9-2/3.1.4, 4-9-2/3.1.6, 4-9-2/3.1.7, 4-9-

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2/3.5, 4-9-2/3.7, 4-9-2/7.1, 4-9-2/7.5, 4-9-2/7.7, 4-9-2/7.9, 4-9-2/7.11, 4-9-2/7.13, 4-9-3/5.1, 4-9-3/7, 4-9-3/13.1, 4-9-9/7, 4-9-9/Table 1 and Table 2, 4-9-14

2025 ABS Rules for Conditions of Classification - Offshore Units and Structures (2025):1-1- 4/9.7, 1-1-A2, 1-1-A3, which covers the following:
2025 Offshore Units Rules: 4-3-4/5, 4-3-4/6

National:
NA

International:
- IACS UR E10 Rev 8,(2021)
- IACS UR E27 Rev 1 (2023)
- IACS UR E22 Rev 3,(2023)

Government:
NA

EUMED:
NA

OTHERS:
NA