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Attn Mr Jouni Savolainen

Your ref meeting 10 May 2019
Our ref GJV/W05146680, rev.1 RTS/ETS/16M016

01 June 2019

Approval in Principle
ABB Dynamic Positioning control system ABB Marine Ability™ Pilot Control
(Class notation DP-CM, DP-AM, DP-AA)

1. Lloyd's Register has awarded Approval in Principle (AiP) to the ABB DP Control system ABB Marine Ability™ Pilot Control for the use on ocean going ships, yachts, and Special Service Craft and Inland Waterway ships.

2. The Rules and Regulations on which this AiP is based:
   a) Rules and Regulations of Ships part 7 chapter 4 Dynamic Positioning Systems, Issue 2018.
   b) Rules and Regulations of Ships part 6 chapter 1, Rules and Regulations of Special Service Craft part 16 chapter 1, Rules and Regulations of Ships part 6 chapter 1, ROSR.
   c) IMO CIRC 1580 and 945.

3. The documentation on which this AiP is based:
   a) CONSOLE_IRC document
   b) CONSOLE_UI document
   c) Control Pilot_ DP3_Network topology_v1
   d) RCS Topologies for three solutions
   e) Multithruster FMEA draft rev0
   f) MPC_User Manual_draft00
   g) mpc_concept180418
   h) IRC_BIU

i) IRC_ECR
j) IRC_PCU
k) DP 3 topology for AIP
l) 3AFV006075R0010_RCS_Function_Description
m) 8MAL100010-0002_en Marine Cyber Security
n) ABB Marine Ability TM Pilot Control DP2 design
o) DP_2_Newtwork _hi_level_picture
p) MPC_GUI_User Manual_1.0
q) System description

4. Further details are to be followed up during vessels detailed engineering:
   a) Equipment delivered under EU flagged ships to be provided with MED certificate for the indicators and equipment listed on EU directive annex.
   b) The FMEA to demonstrate that the fiber optic cable connections and copper cables will not influence the functionality of the redundant system for DP-AM class notation.
   c) This approval also does not cover the approval of the project specific software

5. The AiP does not constitute regulatory approval;
   - It provides a level of assurance that given good engineering design practice, there are no conceptual issues which should prevent the design gaining the necessary approvals;
   - To gain full approval, all of the necessary regulatory requirements will have to be met, or equivalency demonstrated and accepted by the appropriate regulatory body;
   - To gain full approval, the software in due time LR- SCA review and it is expected that hardware and core software will comply with Type approval Specification 1.

G.J.Vromans
Principal Surveyor, Electrotech
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A. W. van der Velden
(Reviewer)
Lead Senior Surveyor, Electrotech
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Valid: 5 years after issue.