



KEMENTERIAN PERHUBUNGAN REPUBLIK INDONESIA  
DIREKTORAT JENDERAL PERHUBUNGAN LAUT



MINISTRY OF TRANSPORTATION OF THE REPUBLIC OF INDONESIA  
DIRECTORATE GENERAL OF SEA TRANSPORTATION

## SERTIFIKAT KETERAMPILAN CERTIFICATE OF PROFICIENCY

Nomor Seri / Serial No.

**CP5932633**

Dengan ini dinyatakan bahwa  
*This is to certify that*

Nama  
*Name*

**ZAENAL ARIFIN**

Tempat dan tanggal lahir  
*Place and date of birth*

**TULIS, BATANG, 19 DECEMBER 1979**

telah menyelesaikan pelatihan dan lulus evaluasi :  
*has completed approved training and passed the assessment of*

### **RADAR SIMULATOR Revalidation**

yang dilaksanakan oleh : **PIP Semarang**  
*which has held by*

di : **Semarang**  
at : **12 September 2014 to 13 September 2014**

Sesuai ketentuan STCW 1978 beserta dengan amandemennya, Peraturan : **Section A-II/1.5, A-II/2.2 STCW 2010**  
*in accordance with the provisions of STCW 1978 as amended, Regulation Section A-II/1.5, A-II/2.2 STCW 2010*  
yang telah mendapat pengesahan dari Direktorat Jenderal Perhubungan Laut selaku Administrasi.  
*which has been approved by the Directorate General of Sea Transportation as Administration.*

Tandatangan Pemilik  
*Signature of the Holder*



PIP Semarang

**Semarang, 25 August 2023**

An. Direktur Jenderal Perhubungan Laut  
O.b. Director General of Sea Transportation

Ketua/Direktur/Kepala  
*Principal/Director/Head*



**Dr. Capt. TRI CAHYADI, M.H., M.Mar.**

## **RADAR SIMULATOR**

### **Subject Area**

**Based on Reg. II/1, II/2 and STCW 2010 Code Section A-II/1, A-II/2**

#### **Use of RADAR to Maintain Safety of Navigation**

- 1. Radar navigation**
- 2. Knowledge of the fundamentals RADAR**
- 3. Ability to operate and to interpret and analyse information obtained from RADAR**
  - 3.1. Performance of :**
    - 3.1.1 factor affecting performance and accuracy**
    - 3.1.2 setting up and maintaining displays**
    - 3.1.3 detection of misrepresentation of information, false echoes, sea return, etc., racons and SARTs**
  - 3.2. Use of :**
    - 3.2.1 Range and bearing; course and speed of other ships; time and distance of crossing, meeting overtaking ships**
    - 3.2.2 Identification of critical echoes; detecting course and speed changes of other ships; effect of changes in own ship's course or speed or both**
    - 3.2.3 Application of the international regulation for preventing collision at sea, 1972, as amended**
    - 3.2.4 Plotting techniques and relative – and true – motion concepts**
    - 3.2.5 Parallel indexing**
- 4. Evaluation of navigational information derived from RADAR in order to make and implement command decision for collision avoidance and for directing the safe navigation of the ship**
- 5. Assessment and Evaluation**