WENDWG13
PRIMAR S-100 Implementation Plans

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PRIMAR S-100 Roadmap

S-102
Demonstrator
project initiated

CHS - CARIS
-PRIMAR S-100
project initiated

S-100
Training portal launched

| 2012 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |

S-128
S-100e5
S-104
+++

Initial S102
investigations with Pilots

S-101
5 Year Program

Available S-102 and S-111
products in PRIMAR
database

RTZ (future S-421)
products in PRIMAR
database

Dual fuel
S-57/S-101 service

Involved in R&D Projects:
https://s102.no/
https://s-100.no/

FREEDOM TO CHOOSE
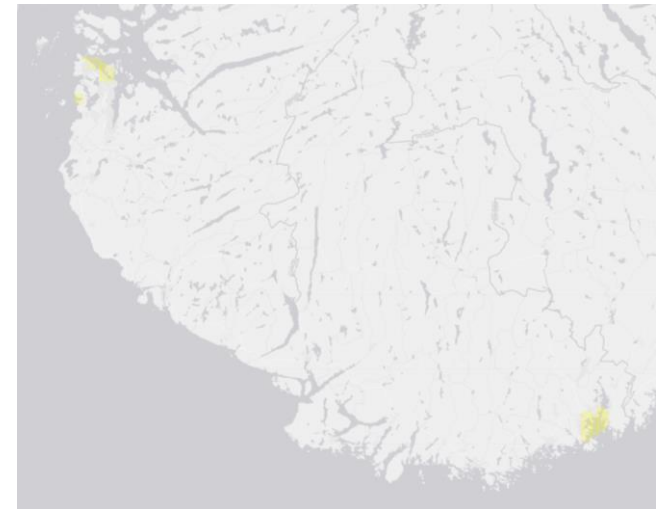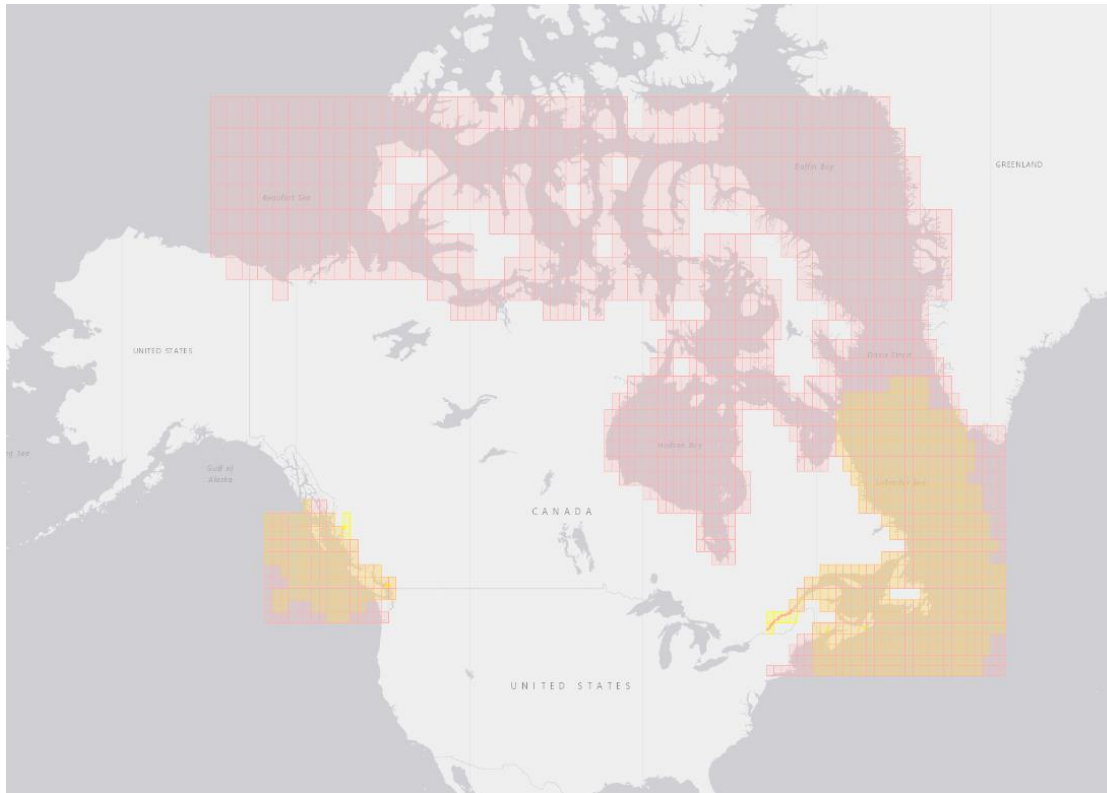
PRIMAR S-100 Service

- The PRIMAR S-100 Service was launched July 2020
- 2500 S-102 / S-111 datasets from CHS and 45 S-102 datasets from NHS.
- Encrypted by S-100 part 15
- Automatic upload through CARIS cloud or manual through PRIMAR VPN
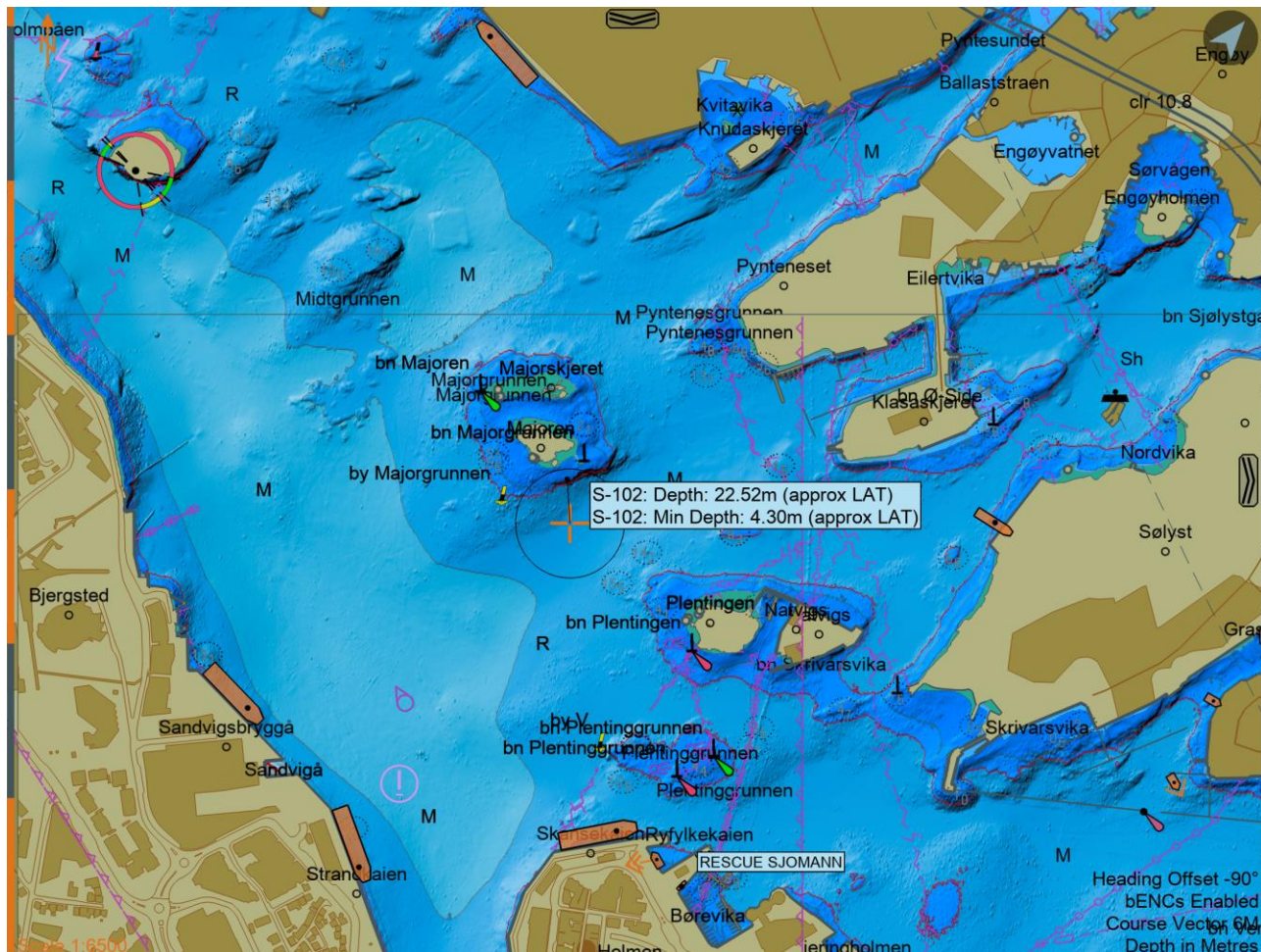- Push of data through the PRIMAR Remote Update Protocol
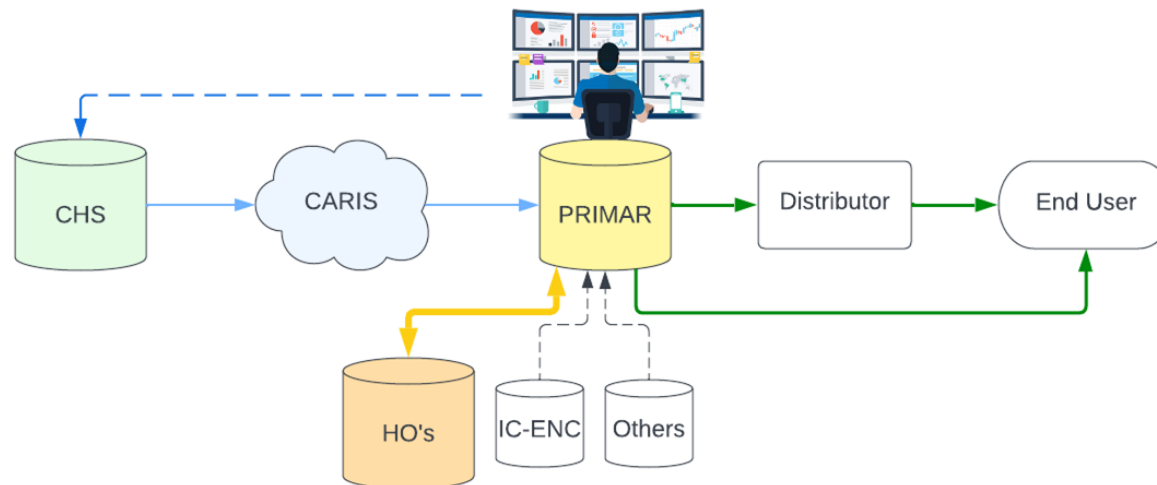
PRIMAR S-100 Service

Norwegian S-102 data in SEAiq end-user software.

PRIMAR S-100 Service

- Further scope and milestones:

  - Continue the cooperation between PRIMAR, CHS and CARIS related to production, management and distribution of S-100 products.
  - Expand the S-100 Service with data from other nations/producers.
  - Expand the type of S-100 products in the Service.

- Develop support for S-104 in PRIMAR S-100 Service
- Include delivery of the S-57 ENC via the same value chain.
- Automation of the validation process at upload

S-57 / S-101 Dual Fuel Service

- S-100 program initiated in 2018

- Develop support for S-100 data model in PRIMAR services and functionality
- Establish dual-fuel S-57 & S-101 distribution
- Online HO services for QC and Data Management support S-100/S-101
- Provide S-101 testdata and dual-fuel service interface to manufacturers developing support for IHO S-100/S-101 standards

- Value
  - Feedback to IHO WG on S-100 standards
  - Testing of S-100/S-101 service elements towards PRIMAR member states and distributors
  - Trial dual-fuel S-57/S-101 distribution service
  - Harmonised S-100 transition plan

S-100e5 Service Upgrade

- Upgrade of PRIMAR services

- Triple services
  - S-63
  - S-100e4
  - S-100e5

- Provide support to everyone implementing S-100e5

PRIMAR Conversion Task Force Project

- PRIMAR approached by HOs requesting feedback on guidance on data conversion (conversion strategies, sharing of experiences, transition to S-10x, dual-fuel production).

- Conversion Task Force Project agreed by PRIMAR Advisory Committee (PAC) in November 2020.

- Terms and conditions agreed with PRIMAR Member States end of May 2021.

- …and a possibility for PRIMAR Member States to participate in other PRIMAR S-100 projects with HO's own S-101 ENC test data.

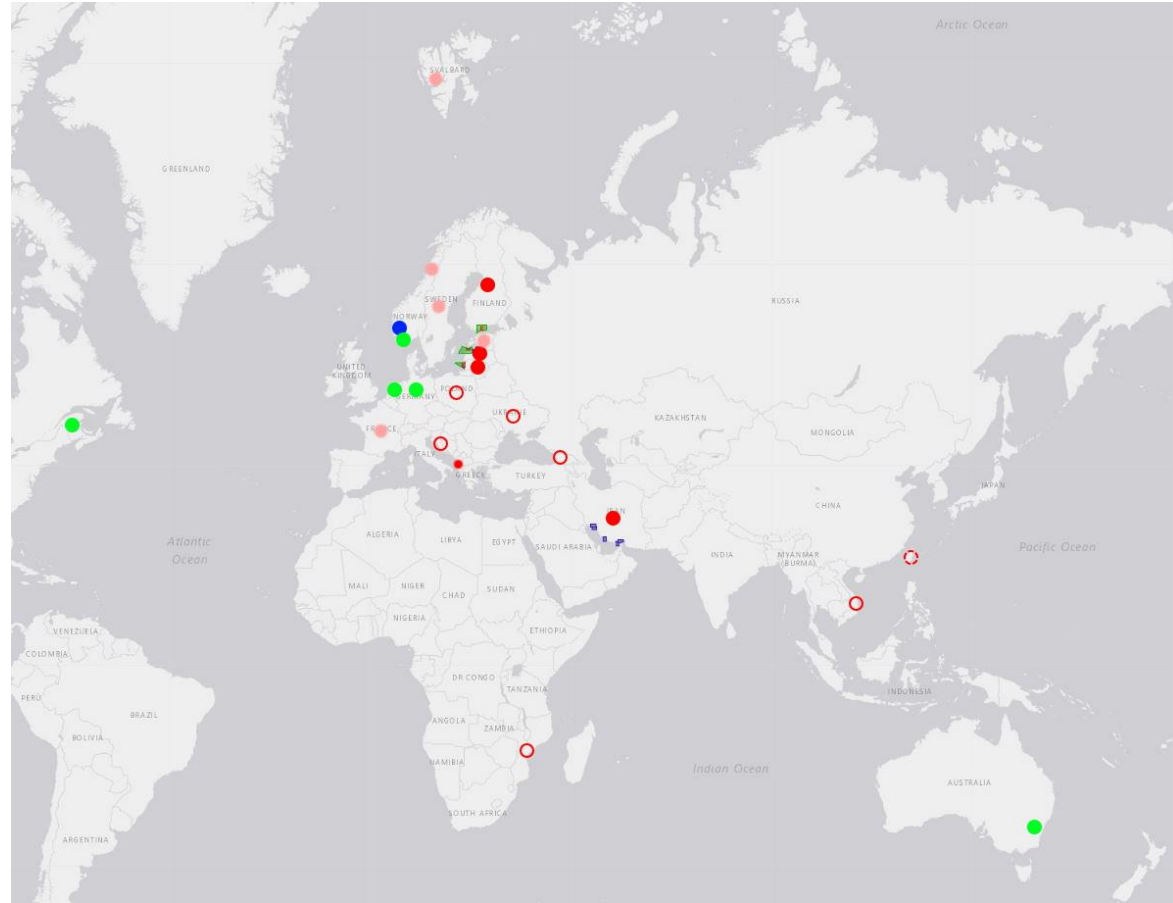# PRIMAR Conversion Task Force Project

Project Lead:
PRIMAR

Active HO Participants:
~12 PRIMAR member states

Industry (OEM) participants:
- i4Insight
- SevenCs/Nautical Dimensions
- Teledyne CARIS

Blue dot – PRIMAR
Pink dots - Group 1 Member states
Red dots - Group 2 Member states
Red circles - Group 3 Member states
Green dots - OEMs

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Systems Providers in CTF Project

Teledyne – CARIS platform – online converter.

- Online tool with FC 1.0.0 conversion

- S-57 to S-101 conversion

SevenCs – 7Cs Analyzer – S-101 ENC validation

- Latest version 5.1.0 with selectable FC version option and S-101 portrayal module.

i4 Insight – dKart platform – desktop and AWS PC converter

- Local and AWS installation option

- Latest version 1.0.0.1965 with selectable FC versions for conversions

- Both ways conversion - S-57 to S-101 AND S-101 to S-57 conversion

- Visual inspection and analysis of conversion results

PRIMAR PORTAL - upload checks, validation and ENC release "sandbox"

- VPN, VRC

- Dual Fuel release

- PRIMAR Training Portal with various S-100 module courses

- GitHub for system support, questions and answers and knowledge and experience exchange

CTF Project plan and phases

The project is divided in 3 phases:

| Setup of systems and procedures (2021-2022) | Data conversion and validation (2022-2023) | Final reporting (May-July 2023) |

- Resource, license and cost limitations restrict number of participants who can access some tools simultaneously.

- PAC has enabled funding to enable all PRIMAR Member States to participate.

- Flexible Group participation approach applied for best time fit for each HO "active phase" conversions.

CTF Phase 3 - Project Reporting

Activities	Oct	Nov	Dec	2023 Jan	Feb	Mar	Apr	May	Jun	Jul
Report on standardisation status								█		
Report on conversion results			█			█		█		
Report on validation results								█		
Report on conversion/national guidance								█		
Identify development issues to improve conversion/validation	█	█	█	█	█	█	█	█		
Report on strategic issues								█		
Review draft report		█							█	
Final report available										█
Final Presentation PSWG/PAC 2023								█		█

- Prepare final report to PRIMAR Advisory Committee
  - Based on guidance and feedback from HOs and PRIMAR

- PRIMAR and HOs co-produced guideline procedures for data conversion and validation
  - Pre-processing of datasets (depends on HO participants activity and feedback)
  - Conversion and validation procedures
  - Post-processing of datasets (depends on HO participants activity and feedback)
  - Strategic and resource requirements (depends on HO participants activity and feedback)

- Status reports at PAC/PSWG/PFWG (2021 - 2023)

- Feedback to IHO S-57 to S-101 Conversion Sub Group (ENCWG) and other appropriate S-101PT Sub Groups

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S-128

- Establish catalogue service compliant with S-128 Exchange Catalogue

- Feedback to:
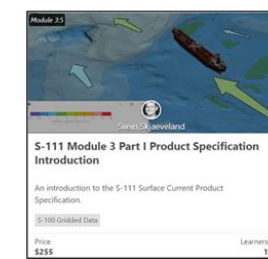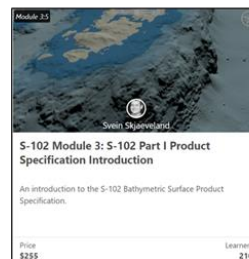 - IHO S-128 project team
  - NIPWG
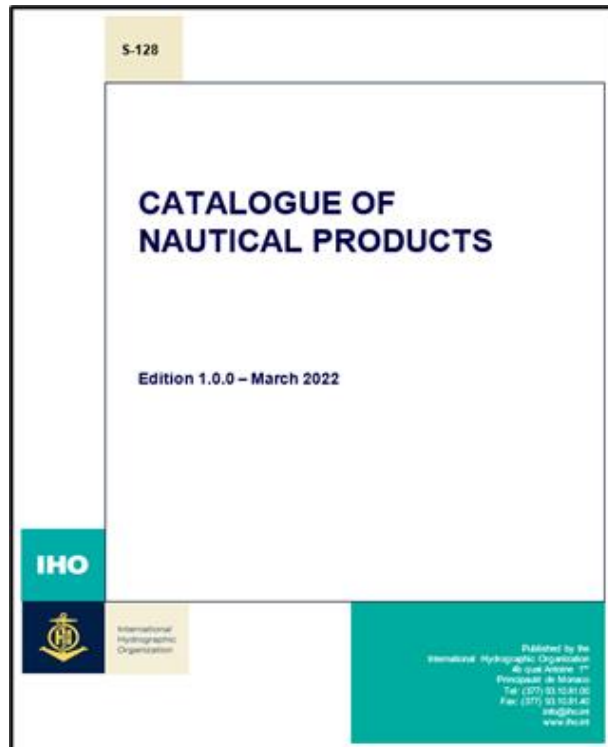
PRIMAR E- Learning Status

Launch of PRIMAR Learnworlds training portal June 2021 & continued investment in CCR056

- Current modules
    - 6 modules S-100/S-101 (2021)
        - S-100: Data Model, IHO Registry and Part 15 Data Protection.
        - S-101 General, Data Quality, Conversion Challenges.
    - 8 modules S-100/S-102/S-111 (2022)
        - S-100: Part 8 Imagery and Gridded Data, Part 10c HDF5 Data Model.
        - S-102 Product Specification, Data Encoding Format, Portrayal.
        - S-111 Product Specification, Data Encoding Format, Portrayal.

- High usage rate
    - 321 students (210 PAC)
    - 201 issued certificates

- Decision from PAC 28:
    - S-104 Training needs

OUR GREAT OFFER

PRIMAR S-102 course bundle

Get quick access to all courses offered by PRIMAR for training in the S-102 standard. Some of the courses include links to free software which can be used to complete practical training and exercises with video solutions to improve your learning.

See below for more details of all included courses!

Buy now $1075 $1049

OUR GREAT OFFER

PRIMAR S-111 course bundle

Get quick access to all courses offered by PRIMAR for training in the S-111 standard. Some of the courses include links to free software which can be used to complete practical training and exercises with video solutions to improve your learning.

See below for more details of all included courses!

Buy now $1075 $1049

Module 2.5

Svein Skjæveland

S-102 Module 3: S-102 Part I Product Specification Introduction

An introduction to the S-102 Bathymetric Surface Product Specification.

Price $255   Learners 210

Module 3.5

Svein Skjæveland

S-111 Module 3 Part I Product Specification Introduction

An introduction to the S-111 Surface Current Product Specification.

S-100 Gridded Data

Price $255   Learners 1

PRIMAR SECOM Project

- IMO e-navigation and MCP in rapid development
    - All relevant e-navigation standards are available in 2022
    - MCP service security and protection achieved with IEC SECOM standard
    - Service providers publish service specifications and develop services

- PRIMAR Service Strategy Initial discussion on PSWG meeting May 2021
    - PSWG 2022 supported delivery of e-navigation services on IMO MCP
    - PAC 28 (2021) supported provision of G1128/SECOM service specification
    - IMO e-navigation services will become important pre-requisite for S-100 development among stakeholders

SECOM Project Scope

- **Content and deliverables (divided in three connecting phases)**

  a. Phase 1 (2022) Deliverables
     - Monitor standards development and development of e-navigation services (project planning and management)
     - Prepare a PRIMAR e-navigation technical service interface specification compliant with IALA G1128 and IEC SECOM

- PAC 29 (2022) to agree and provide directions on further activities
  a. Phase 2 (2023) Deliverables
     - Develop and make available PRIMAR E-navigation services in accordance with service specification
     - Approach and make services available for testing in international IMO MCP E-Navigation trials
     - PAC in 2023 to agree and provide directions on further activities

  a. Phase 3 (Possibly 2024)
     - Provide trial services to international IMO MVP E-Navigation services
     - Release PRIMAR E-Navigation Services with S-57/S-101 and other S-100 content
     - PAC 2024 to agree and provide directions on further activities

IHO S-100e5 Data Protection Scheme

- IHO is Scheme Administrator for S-63 and S-100e4

- Standard changes in S-100e5 data protection

- Empower IHO to operate as S-100e5 Scheme Admin

    – Upgrade software tools S-100e5 Scheme Admin

    – Functionality to digitally sign files S-100e5

    – Procedures handbook and training

- MOU to be developed between IHO and PRIMAR

    – Capacity building, policies, training

IHO S-100e5 Data Protection Scheme

Timeline 2023

- Q1 – Agreement on protection scheme policies

- Q2 – Complete development, procedure handbook, training and set S-100 scheme in operation

- Q3/Q4 – Retraining of new IHO staff

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Thank you for your attention

Questions?

www.primar.org

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