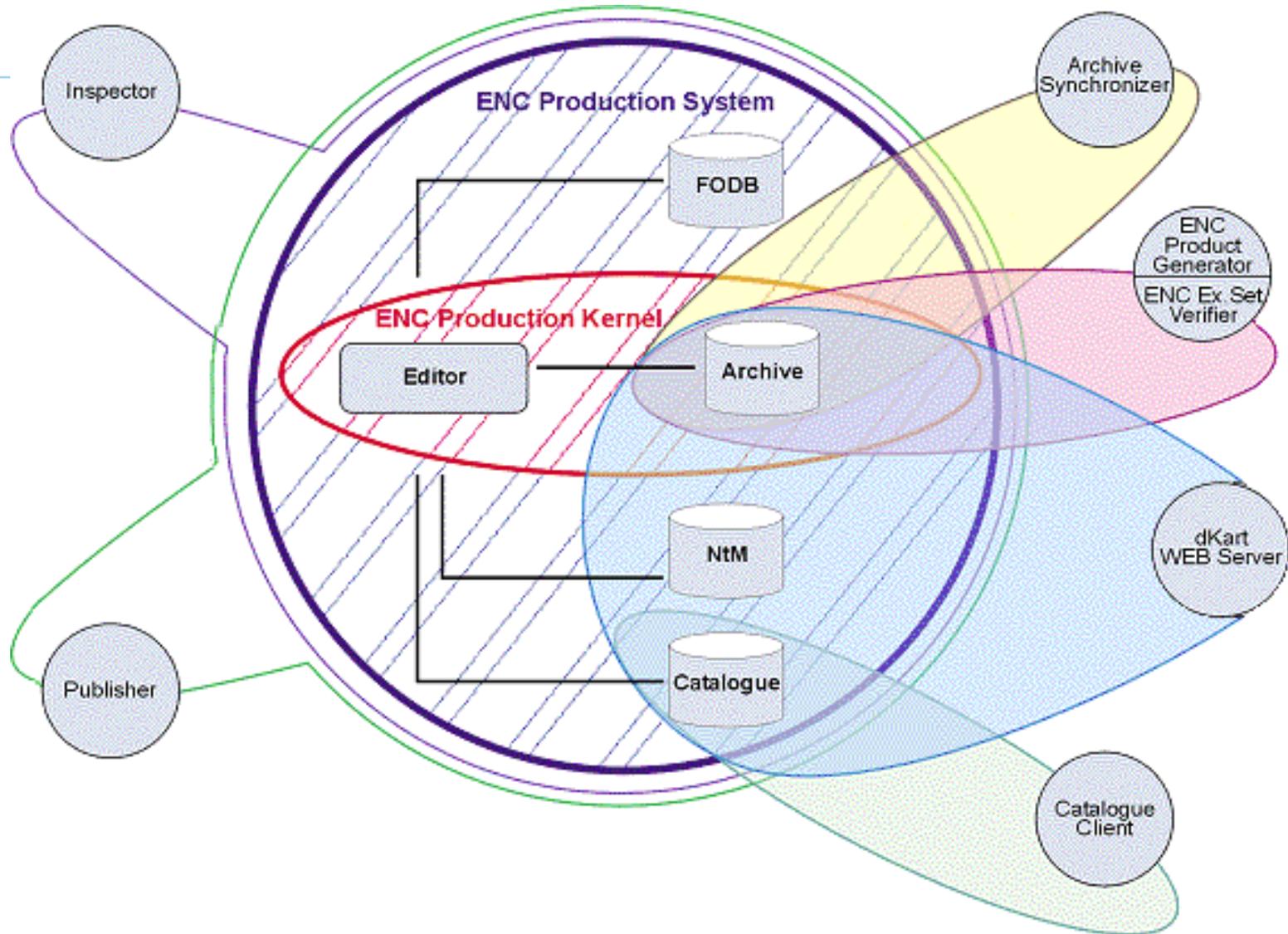


NHS Print on Demand Service

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HydroService



NHS Print On Demand Service

Introduction/General information

In 2006-2007 NHS installed a full featured production and maintenance system for ENC and Paper charts.

All their products are maintained on a continuous, day-by-day, basis within the production environment.

The NHS PoD program must provide interface and back office functions for automatic extraction of paper charts products within the PoD category to a “print ready” format.

The PoD service could also be used to extract other data formats for the paper chart products

MINTEC

Introduction/General information

The NHS PoD program involved following work tasks for Jeppesen:

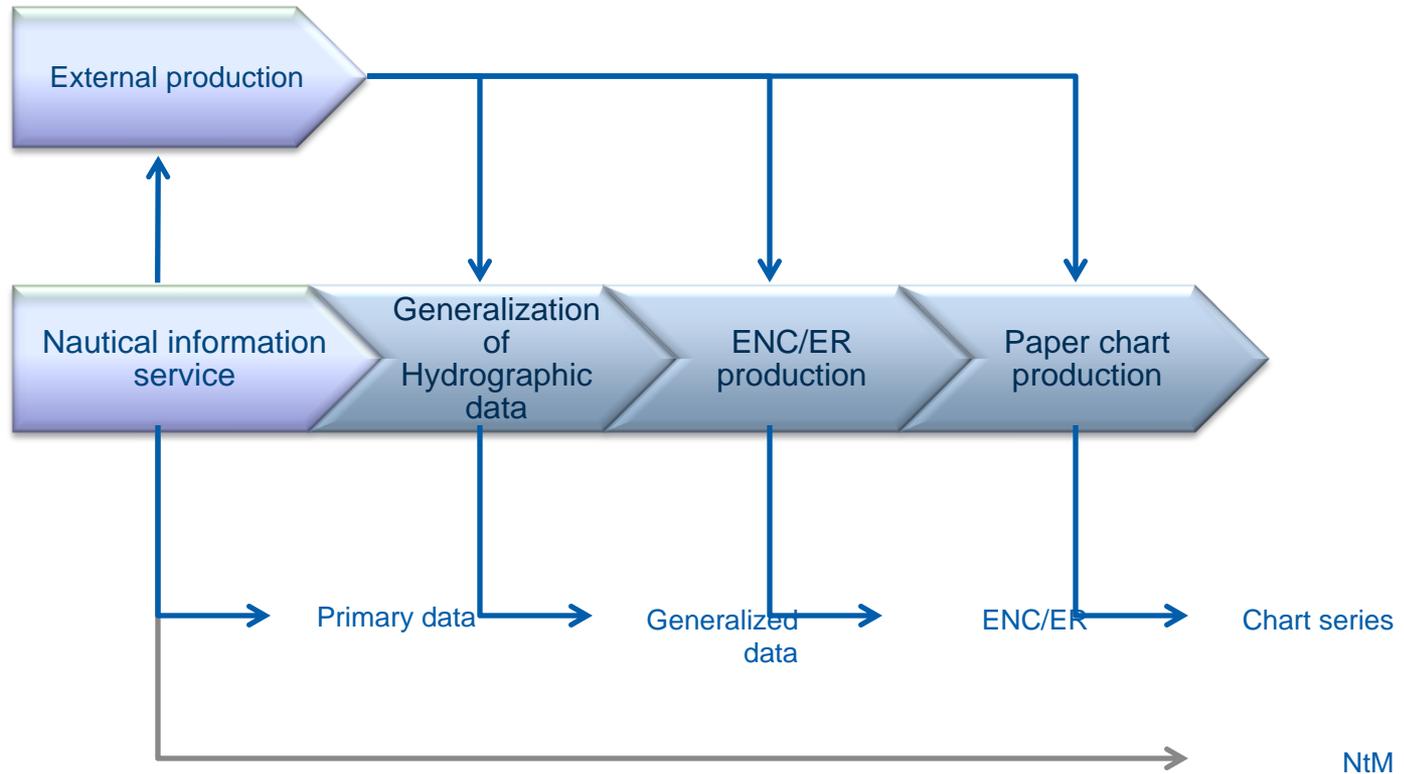
- Project Management
- Installation and system tuning
- Development of new technology
- Development of NHS specific elements
- Test and Acceptance processes
- Quality system monitoring
with Risk Analyzes throughout the project

NHS PoD - Project Mandate

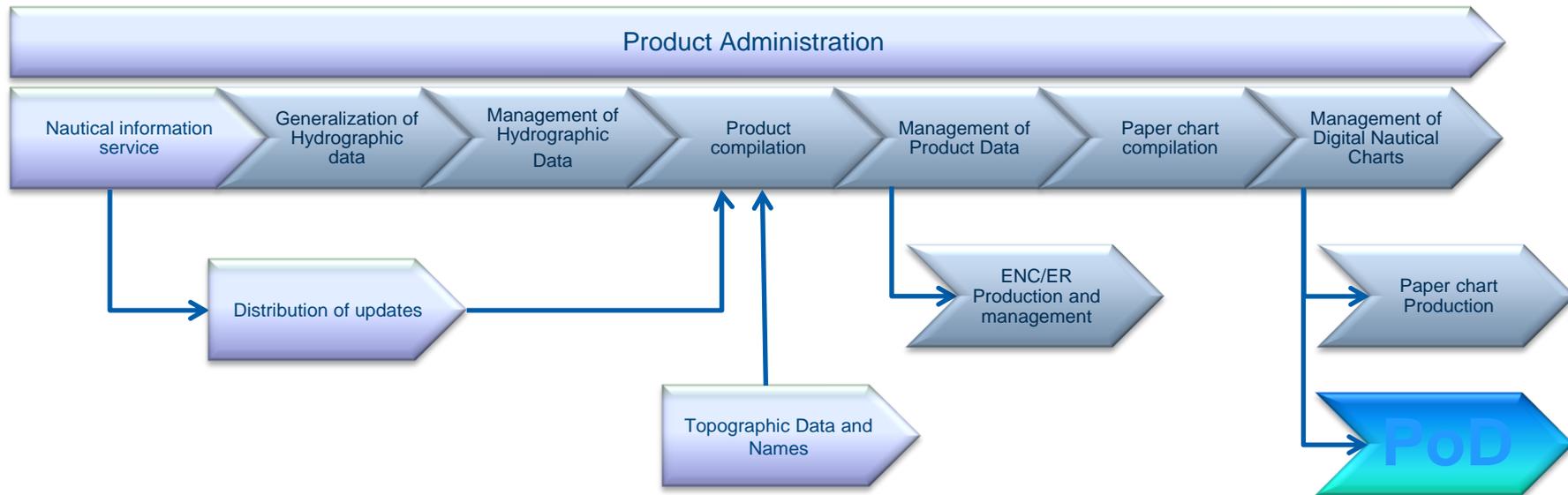
The Norwegian Hydrographic Service (NHS) decided to establish a Print on Demand (PoD) service. The Paper charts are maintained and administered in-house by NHS and distributed using chart agents.

- Establish an efficient technical solution for automated extraction, conversion and establishment of Print Ready paper chart portfolio.
- Production and Maintenance to continue independent of the PoD service
- Process to be synchronized with bi-weekly NtM releases
- Support Scheduled or add-hoc/on-demand extract
- Multiple template support
- Automatic paper chart compilation
- Support "Print Ready" PDF format, with Encryption and data security
- Support for GML and GeoTiff
- Full traceability and logging of events

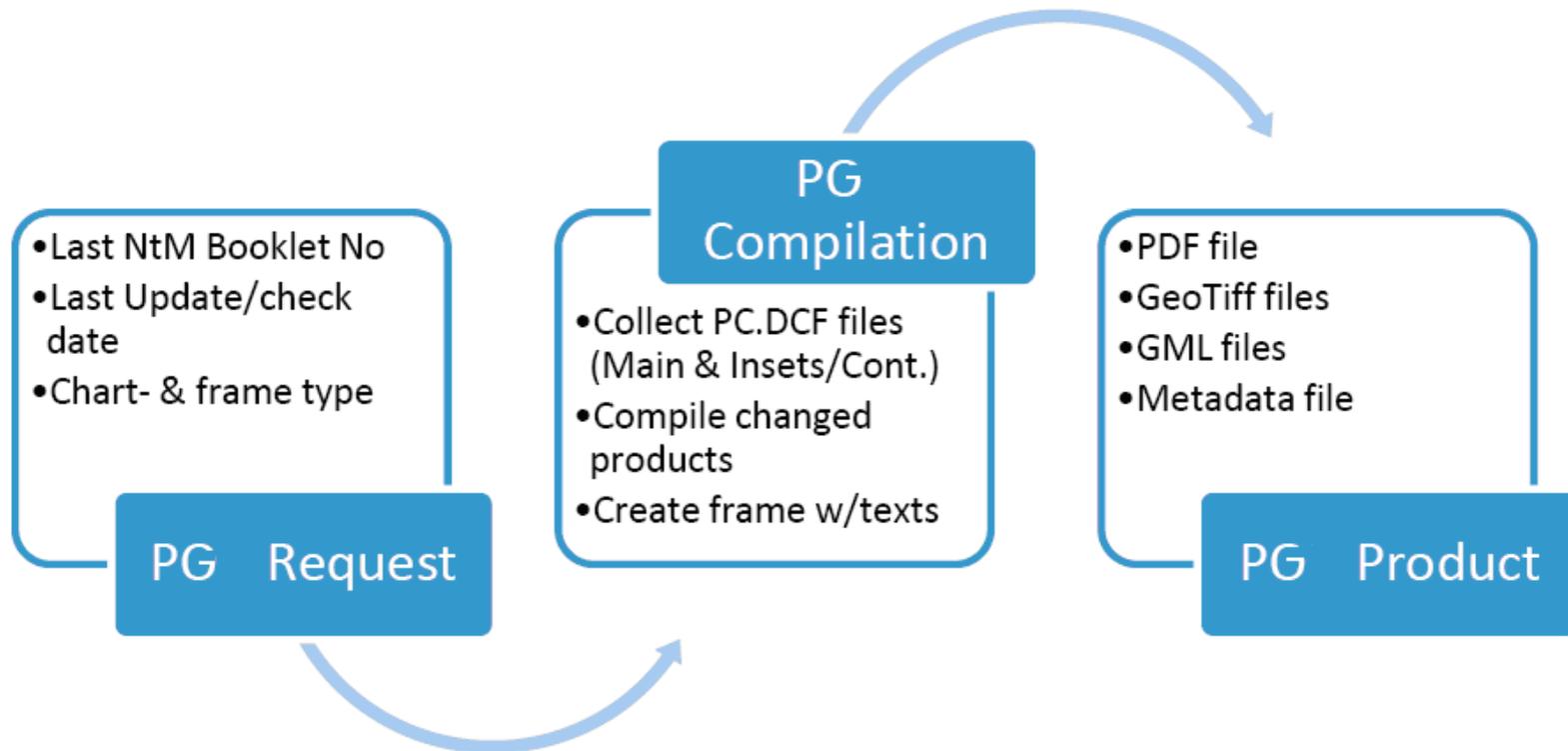
Process overview



Data flow



Business Overview



Left side demonstrates the process of sources selection (Product Line) and defining export options (either by operator or by command-line parameters in unattended mode). Next step shows data extraction and compilation of paper chart, right side depicts product export to the final format.

Test and Acceptance

To ensure consistency between requirements and solutions, test scenarios were defined to each individual (technical) requirement in the contract.

Jeppesen, in close collaboration with NHS, defined these test scenarios.

The execution of the test scenarios was made primarily by of NHS personnel.

Acceptance for each requirement was achieved when all test scenarios were accepted.

Management of Hydrographic Data			
4.2.1-2	Must	Data must be available on a cellular basis for further production.	1
Management of Product data			Completed other/req
			7
4.4.1-1	Must	The system must be able to import 557 data. The import must be as automatic as possible in order to quality assure the process and reduce the use of resources.	Completed other/req
4.4.2-1	Must	The system must support data deliveries to ENC and ER production.	Completed other/req
4.4.4-3	Must	It must be possible to store editorial adaptations to avoid having to repeat them in the event of updates (small scale ENCs, for example, will only have a selection of lights, nav aids, cables and overhead structures).	Completed
4.4.4-4	Must	It must be possible to store editorial adaptations to avoid having to repeat them in the event of updates (small scale ENCs, for example, will only have a selection of lights, nav aids, cables and overhead structures).	Completed
4.4.4-5	Must	It must be possible to store editorial adaptations to avoid having to repeat them in the event of updates (small scale ENCs, for example, will only have a selection of lights, nav aids, cables and overhead structures).	Completed w/Com
4.4.4-6	Must	It must be possible to store editorial adaptations to avoid having to repeat them in the event of updates (small scale ENCs, for example, will only have a selection of lights, nav aids, cables and overhead structures).	Completed w/Com
4.4.4-8	Must	It must be possible to store editorial adaptations to avoid having to repeat them in the event of updates (small scale ENCs, for example, will only have a selection of lights, nav aids, cables and overhead structures).	Completed

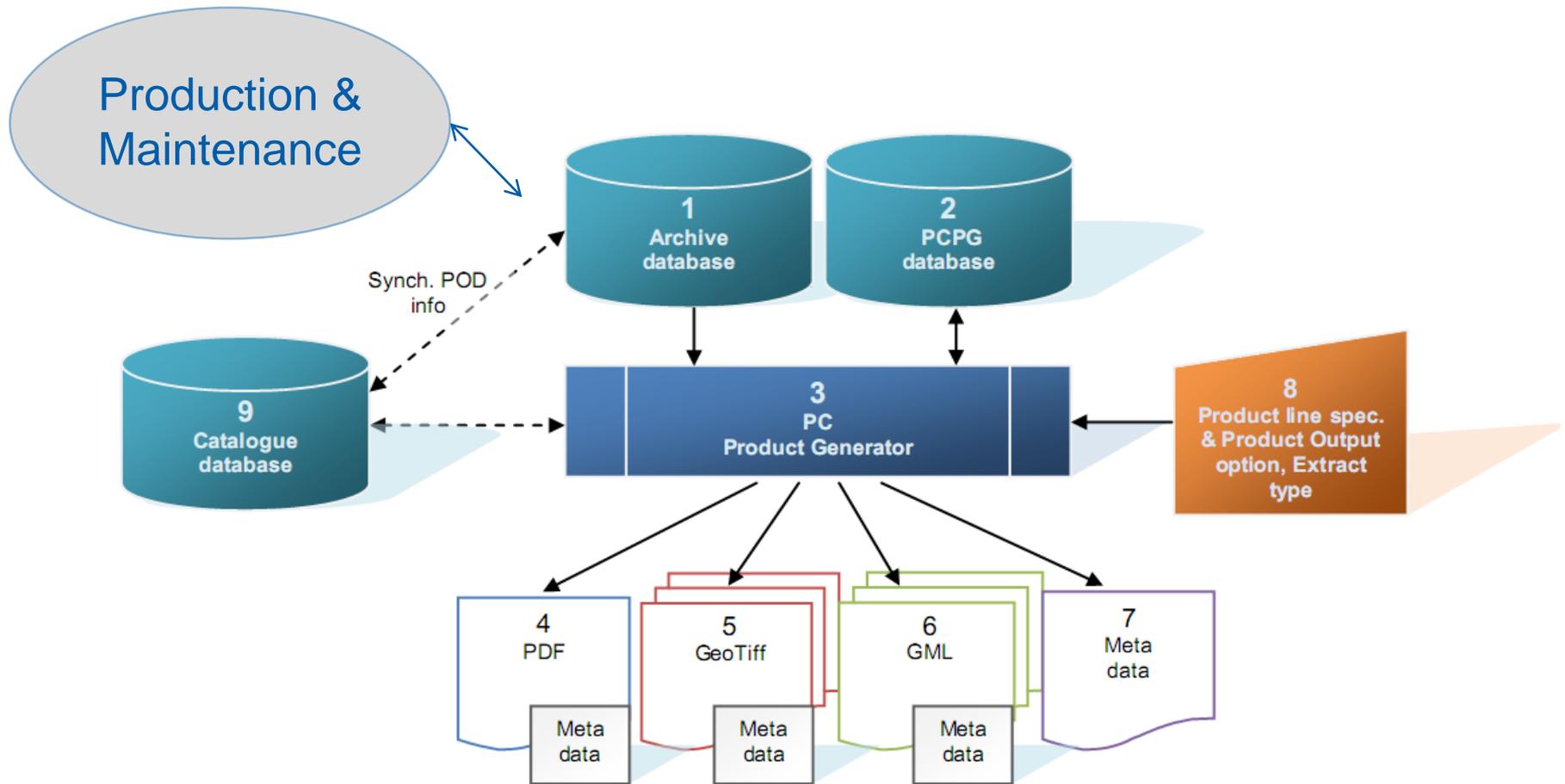
Test and Acceptance

As part of Jeppesen's ISO-9001:2008 quality system all requirements were also put under a continuous monitoring with respect to Risk analysis.

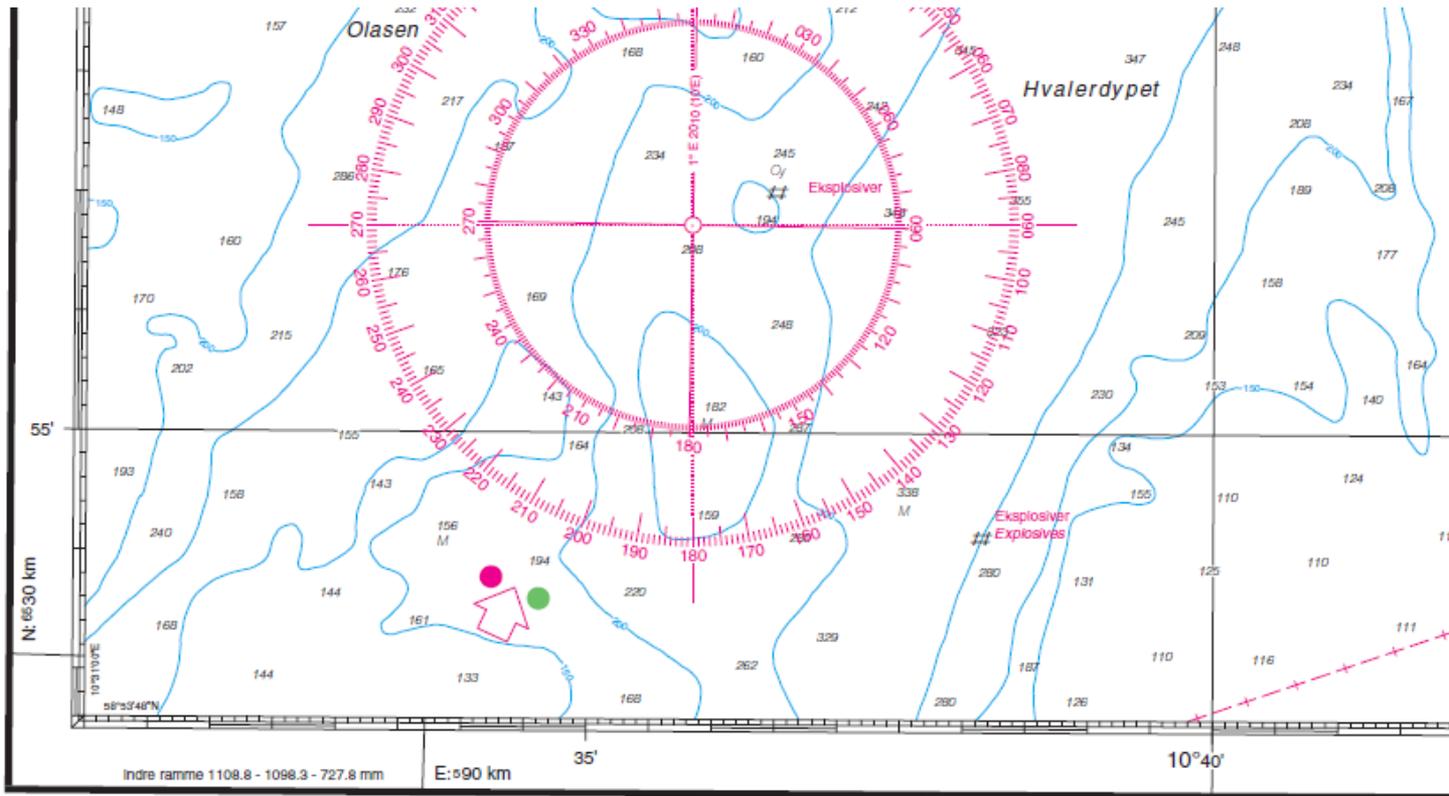
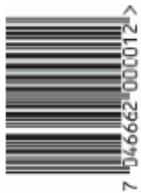
The risk analysis scores are constantly revised and updated to reflect their impact on system- and organizational dependant elements.

2.3 Interface with the NHS's primary Database						
2.3.1 Must						
Requirement			2:H - High			
Efficient and user-friendly interface with the primary database that ensures simple and efficient flow of primary data to the new production line.			Response to requirement To enable the use of standard COTS software, HydroService have proposed to use a bespoke module holding the connection, import/extract routines/scripts to the Primary database. The extract/viewing of information and data will be provided using a user-friendly and integrated interface. Enabling "easy" and secure methods and functions for extracting required data. The extracted data is in second hand made ready for COTS dKart tools for further processing and product completion. The import of information and data to the primary database is provided using the same interface.			
No	ScenarioText	Files	Comment	Status	Resources	Programs
1	Acquire full extraction based on given coordinates			Completed	HydroService	PDB Extractor
2	Acquire object extraction based on given objects/coordinates			Completed	HydroService	PDB Extractor
3	Acquire object extraction based on given date	Pending reply from MIT / 18.07 - - - Closed 24.08.2007 - - -		Completed	HydroService	PDB Extractor
4	Acquire all revision from a given date Tested in 2.2.5		Summary report	Completed	HydroService	PDB Extractor dKart SMDB
5	Show backdrop from Editor/Publisher/FODB			Completed	HydroService	dKart Editor dKart FODB dKart Publisher
2.3.2 Must						
Requirement			2:H - High			
It must be possible for the user to access and use the primary data at all stages of the process.			Response to requirement The dKart tools provide, as standard, functionality the possibility for loading and viewing multiple sources simultaneously. There are also functions for merging product data, copy from/to products etc, and based on advanced technologies.			
No	ScenarioText	Files	Comment	Status	Resources	Programs
1	Shown in 2.3.1		Shown in Backdrop Extract in 2.3.1/5	Completed other/req	HydroService	dKart Editor dKart FODB dKart Publisher

the PoD System extensions

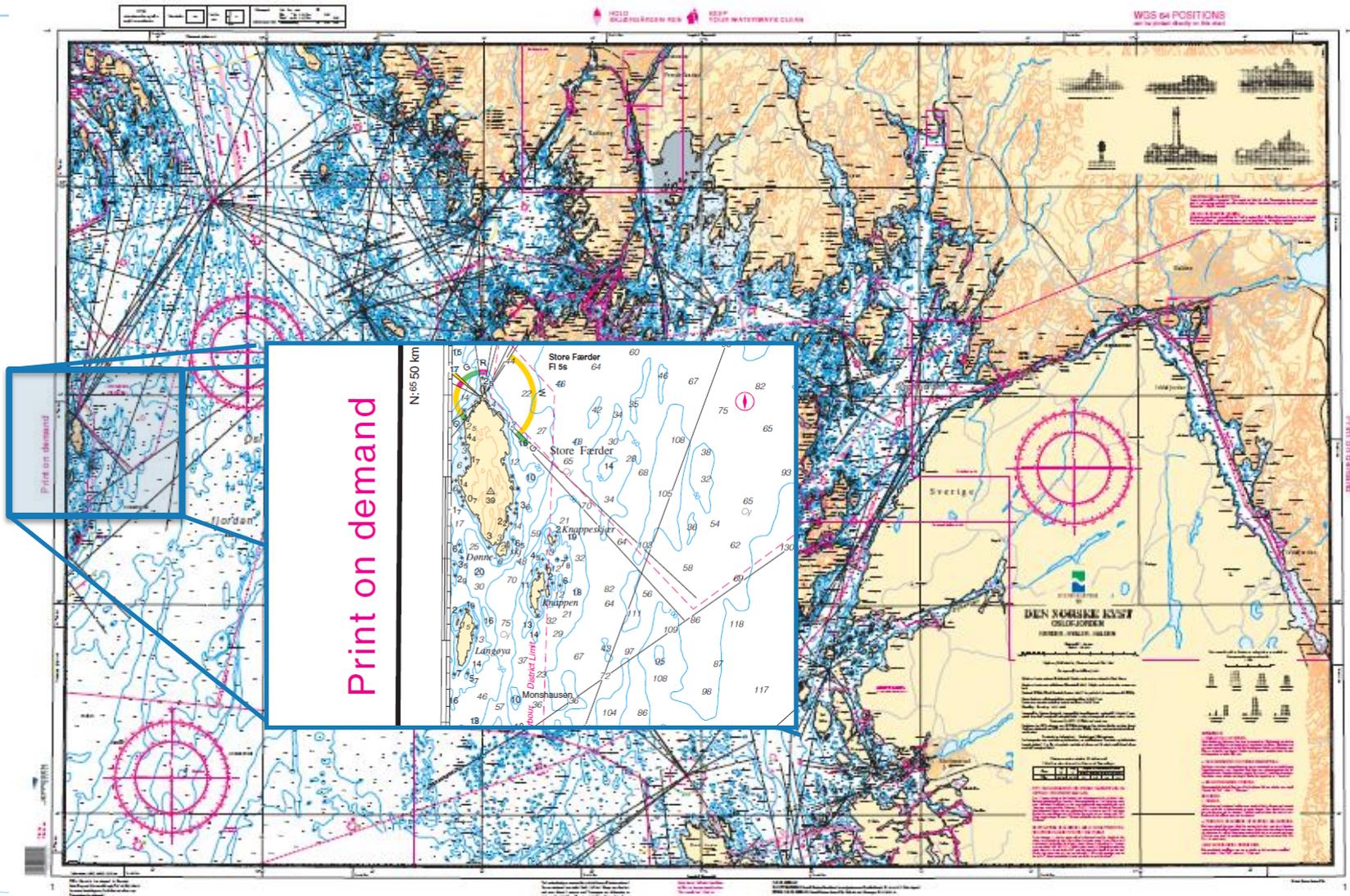


Plot by:
Plottet av:



1

POD: 4. May 2010, *last changed* 10. Nov 2009.
 Rettet til og med (*Corrected through*) "Eis" nr/ (No) 14/2010
 For senere forandringer se (*For further corrections see*)
 "Etterretninger for sjøfarende"



Result

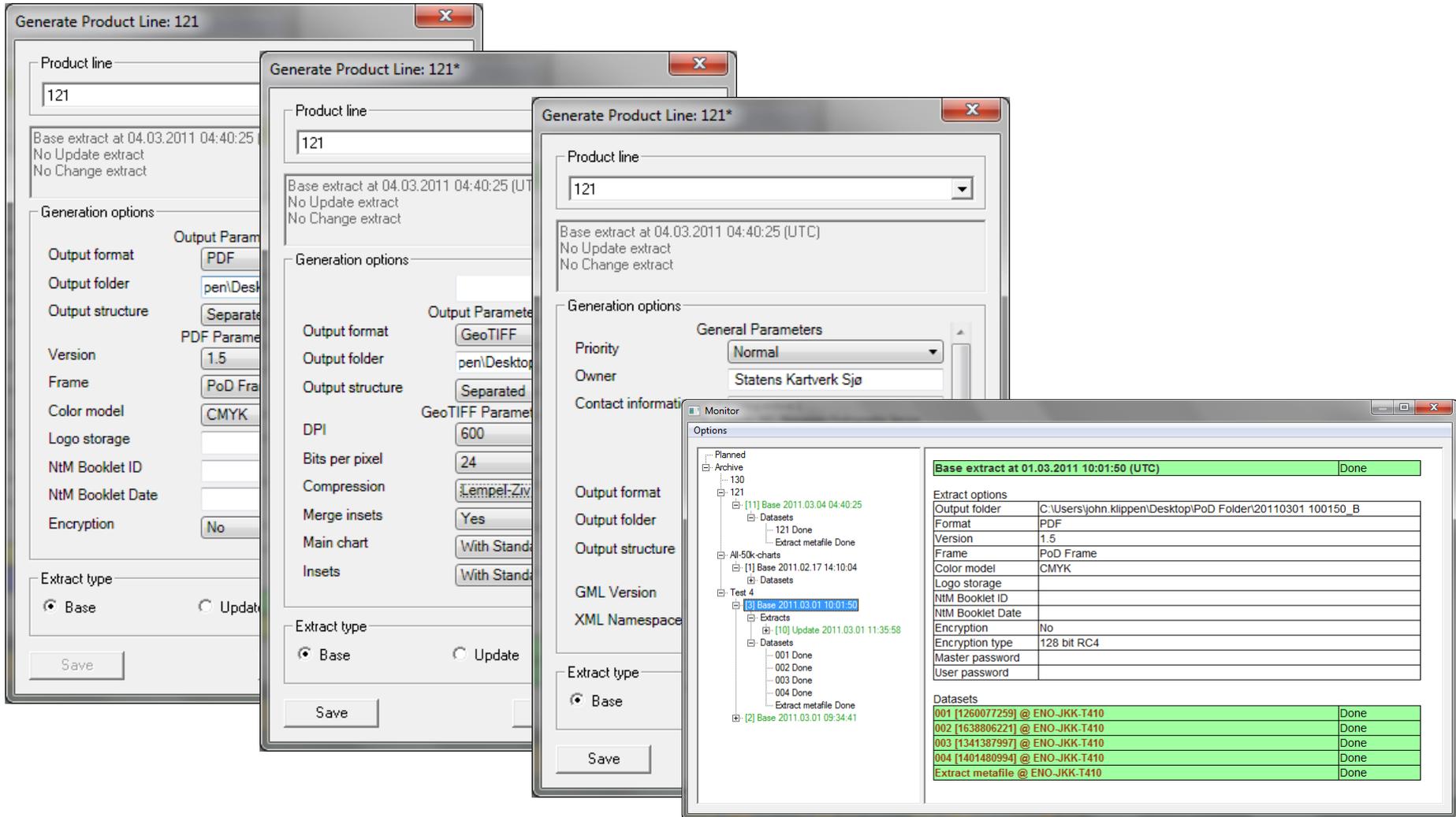
With the dKart Paper Chart Product Generator we are able to:

- Product Line handling
 - Incl. Up-to-date status verification, per. Chart
 - Re-use of “Product line” allow for Update/Change extracts, where only changed products are extracted.
- Automatically extract print-ready Paper charts
 - in Print On Demand service
 - in Standard INT1 output
- Full integration with product maintenance process
- Full traceability and logging of extracts, incl. Error logging
- Scheduled or On-demand extract

Result

Supported data formats

- Support for multiple extract formats:
 - PDF
 - PDF 1.5/1.6 version
 - 128 bit Encryption of cartographic content
 - Fonts and symbols fully embedded
 - GeoTiff
 - GML
- Metadata provided in XML format



The image displays the 'Generate Product Line' software interface with several overlapping dialog boxes and a 'Monitor' window.

Generate Product Line: 121 (Leftmost dialog):

- Product line: 121
- Base extract at 04.03.2011 04:40:25 (UTC)
- No Update extract
- No Change extract
- Generation options:
 - Output format: PDF
 - Output folder: pen\Desktop
 - Output structure: Separate
 - Version: 1.5
 - Frame: PoD Frame
 - Color model: CMYK
 - Logo storage: [empty]
 - NtM Booklet ID: [empty]
 - NtM Booklet Date: [empty]
 - Encryption: No
- Extract type: Base Update

Generate Product Line: 121* (Middle dialog):

- Product line: 121
- Base extract at 04.03.2011 04:40:25 (UTC)
- No Update extract
- No Change extract
- Generation options:
 - Output format: GeoTIFF
 - Output folder: pen\Desktop
 - Output structure: Separated
 - DPI: 600
 - Bits per pixel: 24
 - Compression: Lempel-Ziv
 - Merge insets: Yes
 - Main chart: With Stand
 - Insets: With Stand
- Extract type: Base Update

Generate Product Line: 121* (Rightmost dialog):

- Product line: 121
- Base extract at 04.03.2011 04:40:25 (UTC)
- No Update extract
- No Change extract
- Generation options:
 - General Parameters:
 - Priority: Normal
 - Owner: Statens Kartverk Sjø
- Extract type: Base Update

Monitor (Bottom right window):

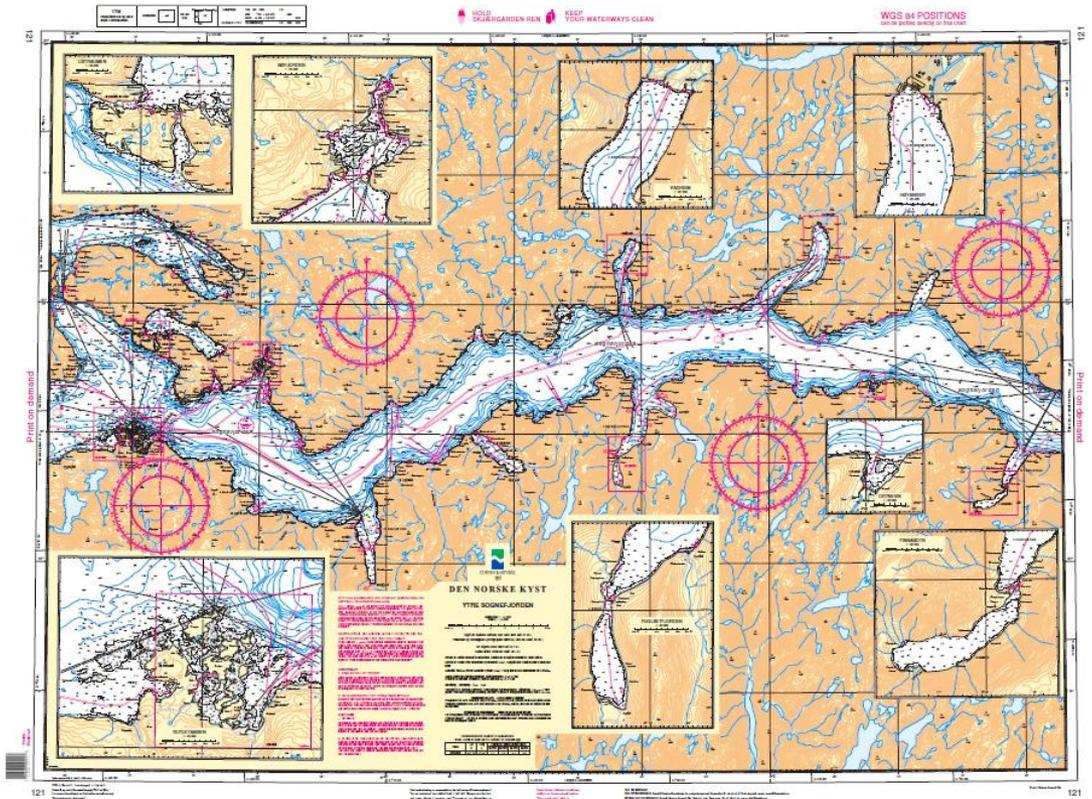
- Options
- Planned
- Archive
 - 130
 - 121
 - [11] Base 2011.03.04 04:40:25
 - Datasets
 - 121 Done
 - Extract metafile Done
 - All-50k-charts
 - [1] Base 2011.02.17 14:10:04
 - Datasets
 - Test 4
 - [3] Base 2011.03.01 10:01:50
 - Extracts
 - [10] Update 2011.03.01 11:35:58
 - Datasets
 - 001 Done
 - 002 Done
 - 003 Done
 - 004 Done
 - Extract metafile Done
 - [2] Base 2011.03.01 09:34:41

Base extract at 01.03.2011 10:01:50 (UTC) Done

Extract options	
Output folder	C:\Users\john.klippen\Desktop\PoD Folder\20110301 100150_B
Format	PDF
Version	1.5
Frame	PoD Frame
Color model	CMYK
Logo storage	
NtM Booklet ID	
NtM Booklet Date	
Encryption	No
Encryption type	128 bit RC4
Master password	
User password	

Datasets	
001 [1260077259] @ ENO-JKK-T410	Done
002 [1638806221] @ ENO-JKK-T410	Done
003 [1341387997] @ ENO-JKK-T410	Done
004 [1401480994] @ ENO-JKK-T410	Done
Extract metafile @ ENO-JKK-T410	Done

- <121> as dKart Vector Edition: 1 contains Paper Chart [1]
 - Placed in archive: 25.06.2009
 - Publishing archive: 1
 - Producer: NO - Norwegian Hydrographic Service
 - Projection: Gauss - Krueger
 - Horizontal datum: WGS 84
 - International Source: NHS Preslib 2.1 Build 21
 - Scale: 75000
 - Border - North: 61°19'59.83"N
 - Border - West: 005°02'54.60"E
 - Border - South: 60°51'54.14"N
 - Border - East: 006°23'35.38"E
 - Update appl. date: 18.11.2010
 - Issue date: 26.06.2009
 - Last checked NtM date: 04.02.2011
 - Updating actions: 171
- Files: 5
 - 121.pc.dcf
 - 121.pc.prd
 - 121_Frame.pc.dcf
 - 121_OutFrame.pc.dcf
 - Strekkode kart 121.jpg
- Slaves: 8
 - <121_BOFJ> as dKart Vector Edition: 1 contains Paper Chart [1]
 - <121_FINN> as dKart Vector Edition: 1 contains Paper Chart [1]
 - <121_FUGL> as dKart Vector Edition: 1 contains Paper Chart [1]
 - <121_HOYA> as dKart Vector Edition: 1 contains Paper Chart [1]
 - <121_LIST> as dKart Vector Edition: 1 contains Paper Chart [1]
 - <121_ORTN> as dKart Vector Edition: 1 contains Paper Chart [1]
 - <121_RUTL> as dKart Vector Edition: 1 contains Paper Chart [1]
 - <121_VADH> as dKart Vector Edition: 1 contains Paper Chart [1]



Thank you for your attention

For further information or questions,
please contact:

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john.klippen@jeppesen.com

