IHO Colours & Symbols Maintenance Working Group (C&SMWG)
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Introduction.

I would like with this paper :

⇨ In a first step to point out the difficulties for manufacturers to satisfy the requirement "Chart Scale Boundaries" described in the conditional procedure "DATCOVR02".

⇨ In a second step, to propose a solution that may be a start point for more research.

1. Description of the Problem .

Extract from PL "DATCOVR2"
Chart scale boundaries.
The "chart scale boundaries", where the navigational purpose of the data changes, should be symbolised on the ECDIS display by a simple linestyle LS(SOLD,1,CHGRD). Alternatively linestyle LC(SCLBDYnn) may be used, with the double line (indicating better resolution) on the side of the larger scale data. The display priority is 3; over-radar; standard display; viewing group 21030.

Only the significant changes from one navigational purpose to another should appear as chart scale boundaries; boundaries marking minor changes in compilation scale that lie within the range of a navigational purpose should not be drawn.

The requirement "*Only the significant changes from one navigational purpose to another should appear as chart scale boundaries"* obliges the manufacturer to group together data coverage areas which come from ENCs of the same navigational purpose.

This operation of grouping together coverage areas of the same navigational purpose is possible if the boundaries of two adjacent cells are exactly coincident. As we know it is not easy for one data-producer to arrange that adjacent cells have a common boundary, and it is very unlikely that two independent data-producers will do so.

Image 1

This picture show an overview situation : the cell boundaries in blue come from ENC (s) of the same navigation purposes:

⇨ *GB5X01NW*
⇨ *GB5X01SW*
⇨ *GB5X01NE*
⇨ *GB5X01SE*
⇨ *GB5X02SE*

As required by DATCOVR2 , the objective for manufacturers is to group together these five areas (data coverage area) in order to draw the exterior boundaries with the oriented complex style ("LC(SCLBNDnn.)") and to inform the mariner where the smaller scale area is and where the better scale area is.

This operation is possible when cell boundaries are coincident but when cell boundaries overlap or are disjoints become very hard. (see image 2)
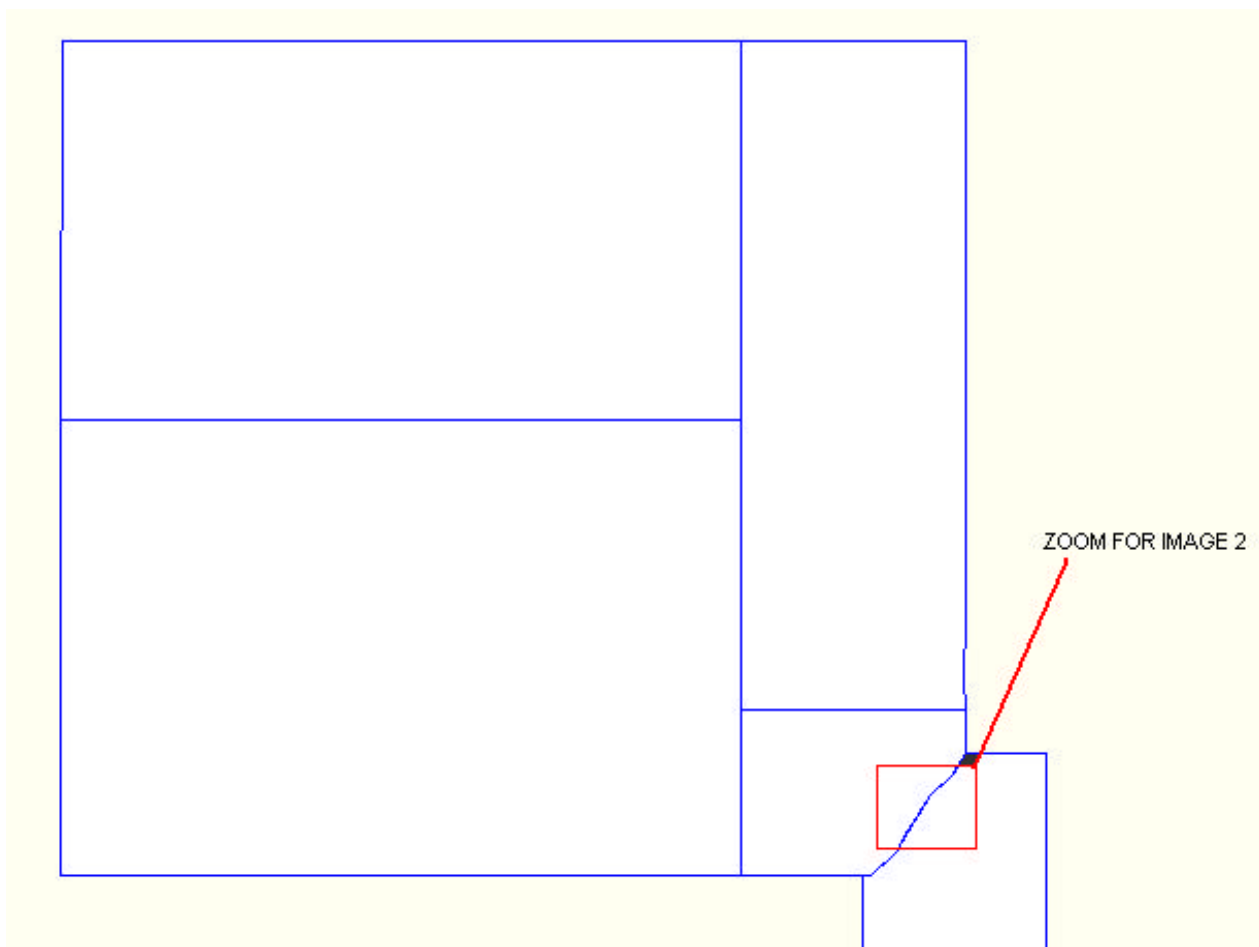

ZOOM FOR IMAGE 2

Image2
This picture shows two cell boundaries from the same navigation purpose. These cell boundaries are not exactly coincident : (overlap or disjoints, I don't know).
Consequently, the result on the screen for the mariner may be confusing which overlapping lines showing up.

Two adjacent cells that doesn't share exactly the same points.

Consequences on the ECDIS screen,
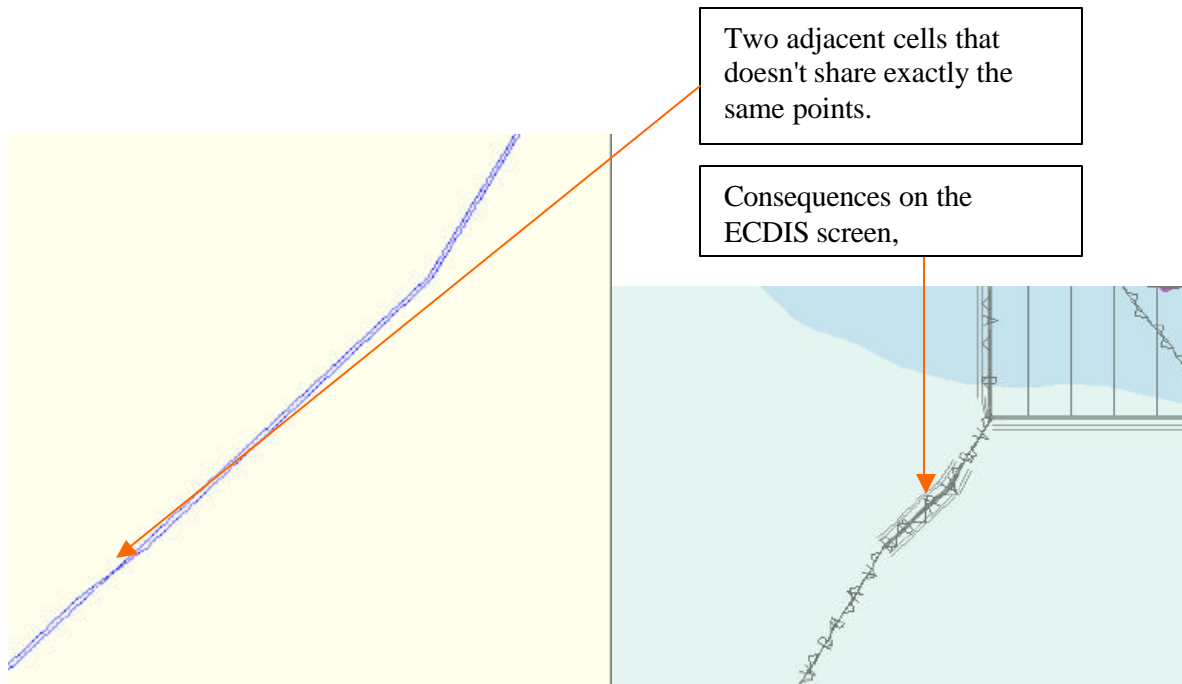
I expect as the coverage of ENC products will increase, this situation could be more and more frequent.

2. Proposal.

This aim of this proposal is to simplify the symbolisation of cell boundaries. (this means to remove a geometric operation in order to make ECDIS safer).

The strategy is to symbolise the areas rather than the boundaries and specifically to identify the smaller scale **area** rather than to symbolise the **boundary** of the larger scale area.

The problem now if this principle is accepted, is to find the good symbolisation.

For example (as a first idea) to symbolise areas , I propose to use a pattern. This symbolisation is conform to the general rules of presentation library and consequently will be shown on a screen as soon as the viewing group 21030 "Chart scale boundaries" is set to on.

The two next examples use pattern to symbolise areas.

3. Examples/First Tests

First example of fill pattern to identify the smaller scale **area** .

⇨ The viewing "21030" is set to on.
⇨ The pattern "- -" on the smaller area replaces the line style "SCLBDYnn".

Second example of fill to identify the smaller scale **area** which a pattern that looks like over scale pattern but dashed. This pattern looks like **the over scale pattern (probably too confusing for the mariner) but be carefully, it is not an over scale situation**, I want to show.