Maximum / Minimum display scales and scale minimum policy in S-101

S-101 PT6 VTC – 23-24 February 2021

- Introduction
- Case 1: Single ENC with 2 Data Coverage features
- Case 2: 2 ENC with 1 Data Coverage feature each and “adjoining” Display scales
- Case 3: 2 ENC with 1 Data Coverage feature each and “overlapping” Display scales
- Recommendations

- The aim of these slides is to illustrate:
  - The importance of maximum and minimum display scales
  - The improvements that could be brought to the S-101 scale minimum policy

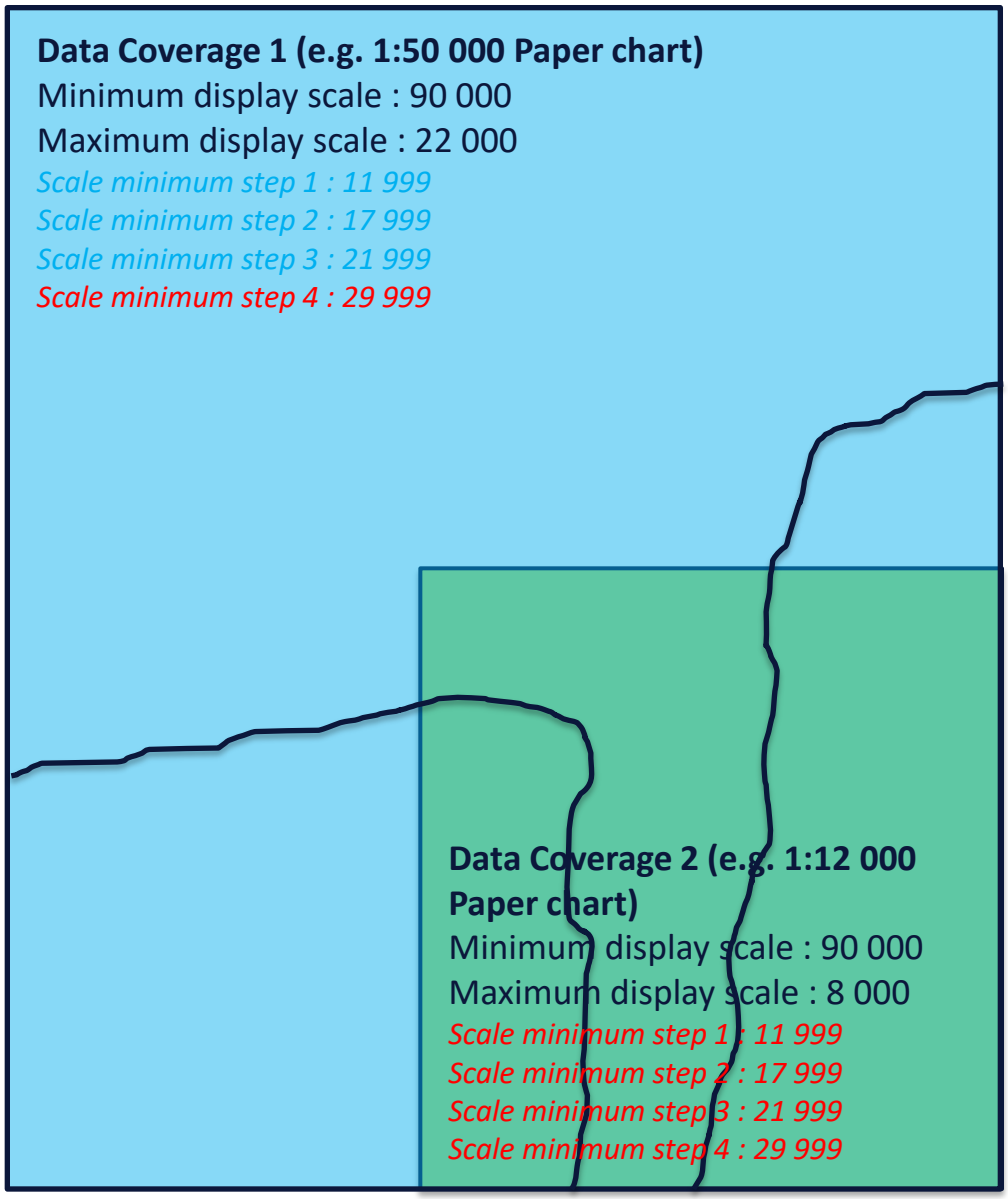
It must be noted that some “defaults” of the scale minimum policy already exist in S-57 (typically, SCAMIN steps not applied as a smaller scale ENC is displayed).

CASE 1: SINGLE ENC WITH 2 DATA COVERAGE FEATURES

Data set maximum display scale: 8 000 (refer to Product Specification §4.5.3).

If the scale minimum policy is applied as in current DCEG (steps will be based on the largest **maximum display scale** of the **Data Coverage** features, i.e. 8 000):

- → **Data Coverage 2** will be displayed between 8 000 and 90 000.
- → 4 scale minimum steps will apply to **Data Coverage 2**: 11 999 to 29 999 (then no step until 90 000).
- → **Data Coverage 1** will be displayed between 22 000 and 90 000, and potentially at larger scale than 22 000, but with an over scale indication.
- → 3 of the scale minimum steps will be applied when **Data Coverage 1** data is shown overscale (before it is displayed at maximum display scale 22 000).
- → **Solutions: scale minimum values should be calculated:**
  - **individually for each Data Coverage feature,**
  - **Between maximum and minimum display scales (more steps than 4 may be useful).**



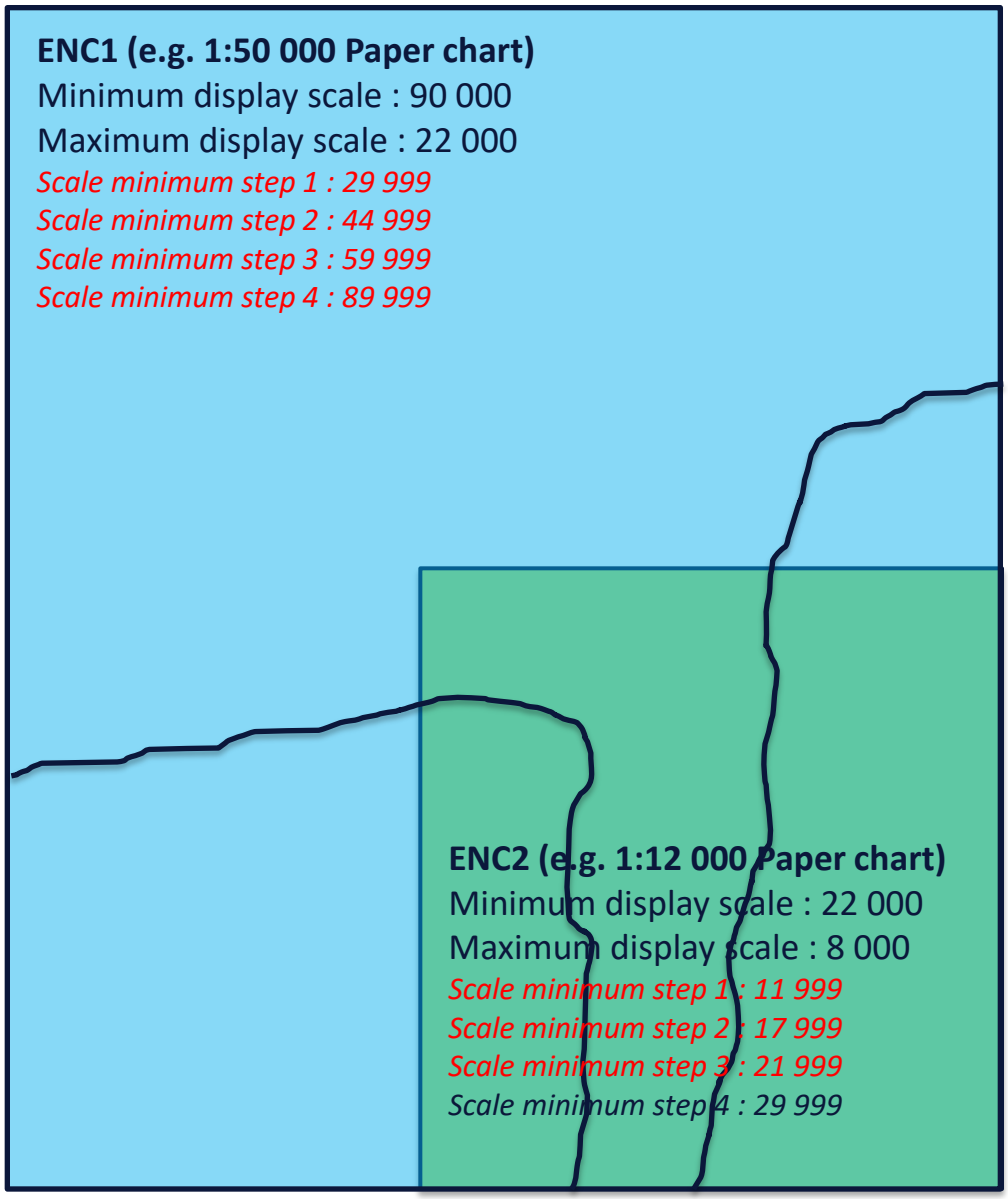
CASE 2: 2 ENC WITH 1 DATA COVERAGE FEATURE EACH AND "ADJOINING" DISPLAY SCALES

Note: ENC1 fully covers ENC2 with data.

If the scale minimum policy is applied as in current DCEG (steps will be based on the largest **maximum display scale** of the **Data Coverage** features:

- → **ENC2** will be displayed in priority between 8 000 and 22 000.
- → 3 scale minimum steps will apply to **Data Coverage 2**: 11 999 to 29 999.
- → **Data Coverage 1** will be displayed between 22 000 and 90 000, and potentially at larger scale than 22 000, but with an over scale indication.
- → 4 scale minimum steps will be applied to **Data Coverage 1.**

→ **Analysis: this situation is quite good because the minimum display scale of ENC2 = maximum display scale of ENC1.**



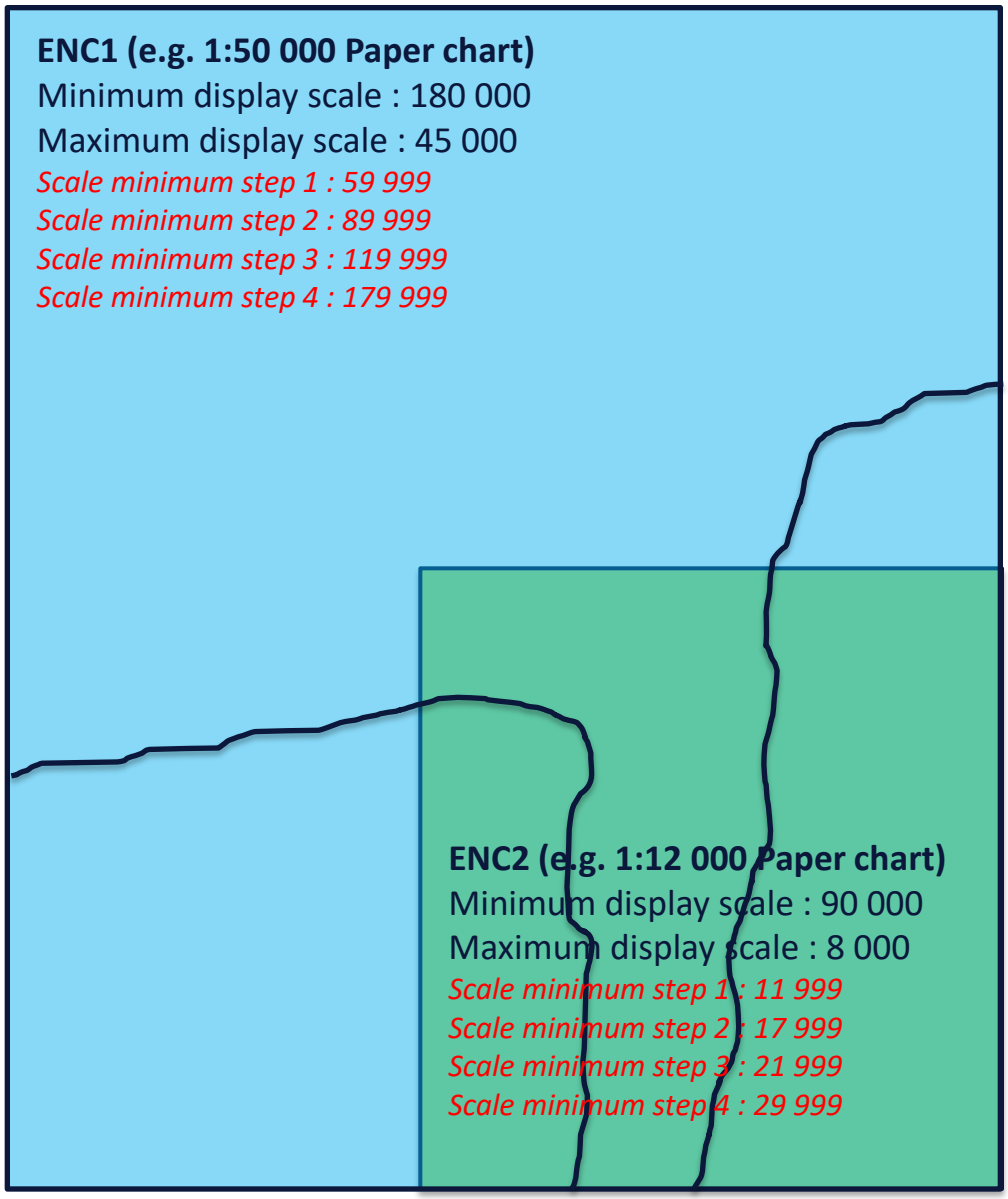
CASE 2: 2 ENC WITH 1 DATA COVERAGE FEATURE EACH AND "OVERLAPPING" DISPLAY SCALES

Note: ENC1 fully covers ENC2 with data.

If the scale minimum policy is applied as in current DCEG (steps will be based on the largest **maximum display scale** of the **Data Coverage** features:

- → **ENC2** will be displayed in priority between 8 000 and 90 000.
- → 4 scale minimum steps will apply to **Data Coverage 2**: 11 999 to 29 999 (then no step until 90 000).
- → **Data Coverage 1** will be displayed between 45 000 and 90 000, and potentially at larger scale than 45 000, but with an over scale indication.
- → 4 scale minimum steps will be applied to **Data Coverage 1.**

- → **Analysis: the issue here is that ENC2 will be shown until 90 000 with few features shown (step 4), whereas ENC1 with step 2 would be more suitable.**



Maximum and minimum display scales

- It seems better to construct series of ENCs without overlapping in the display scales values.
- Maximum display (limit for overscale indication) scale should be distinguished from Compilation scale. Suggested definition: the largest scale at which ENC data can be displayed for safe navigation.

Scale minimum policy

- Scale minimum values should be calculated for each Data Coverage feature.
- Scale minimum values should be larger than the maximum display scale and smaller than the minimum display scale (except for objects present on smaller scale ENCs).
- The number of step and scale minimum values could be reviewed to fit with the above statements.

MERCI !