

## **The significance of recognizing the structural setting within the context of geological 3D-modelling**

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Defining a correct reference orientation or a set of reference structures is nearly always essential for a successful structural geological investigation. In 3D-modelling the requirements are one step higher as the attitude of the reference, or the 3D-network of the reference structures must be known. Selection of the reference or references may be quite straightforward in areas characterized by good exposure and limited tectonic overprint. In contrast, the crystalline Precambrian domains are characteristically structurally complex and poorly-outcropping.

For these reasons, understanding the structural setting of the area of interest, further developed into an evolutionary model or a set of justified hypotheses, and finally into structural references will be required at an early stage of a 3D-modelling project.

This presentation provides a set of examples where understanding the regional-scale structural evolution has proven valuable in understanding the locally developed structural geometries. The cases from the Skellefte District, Sweden, illustrate the role of both the arrangement of early-orogenic faults and the subsequent transpressional overprint in contributing to the present-day attitudes and shapes of the ore deposits. A case from the Peräpohja Belt, Finland, shows how the basement structures controlled the deposition and deformation of the overlying strata. Finally, recognition of the termination of the strike-slip Somero fault in SW Finland is used to understand the topography of the bedrock surface and how it affected glacial erosional and depositional processes.