Objectives
The objectives of our project are: (1) sedimentological and architectural characterisation of Holocene (10-0 kyr BP; Fig.1a) and Eemian (130-115 kyr BP; Fig. 1b) deposits that were originally formed in near-coastal areas, (2) determination of preservation potential of Eemian deposits relative to Holocene deposits, (3) comparison and translation of process relationships and deposit characteristics obtained in a Holocene delta to an Eemian near-coastal setting, and (4) determination of sequence stratigraphic and reservoir modelling implications.

Approach
We will use the huge datasets available at Utrecht University and TNO and new continuous cores, well logs, seismic sections and 3D geological models to sedimentologically and architecturally characterize the near-coastal deposits. The translation of process relationships and deposit characteristics of the Holocene to the Eemian near-coastal setting will be established by using facies distribution, quantitative architectural parameters and the sequence stratigraphic framework. The second part of the project addresses facies response to allogenic and autogenic processes.

For age determination Optically Stimulated Luminescence dating, U/Ta dating, pollen-chronology and tephrachronology will be used.

Ultimate goal
The use of process relationships and facies distribution of Holocene deposits in near-coastal settings for the interpretation of Eemian deposits will now be investigated and tested with field data. This will result in a better understanding of the interaction between coastal and fluvial processes and their effect on facies distribution, geometries and preservation potential in near-coastal areas, greatly contributing to the prediction of architecture and facies distribution in hydrocarbon reservoirs. New conceptual and sequence stratigraphic models concerning the allogenic and autogenic interaction and forcings will be developed.