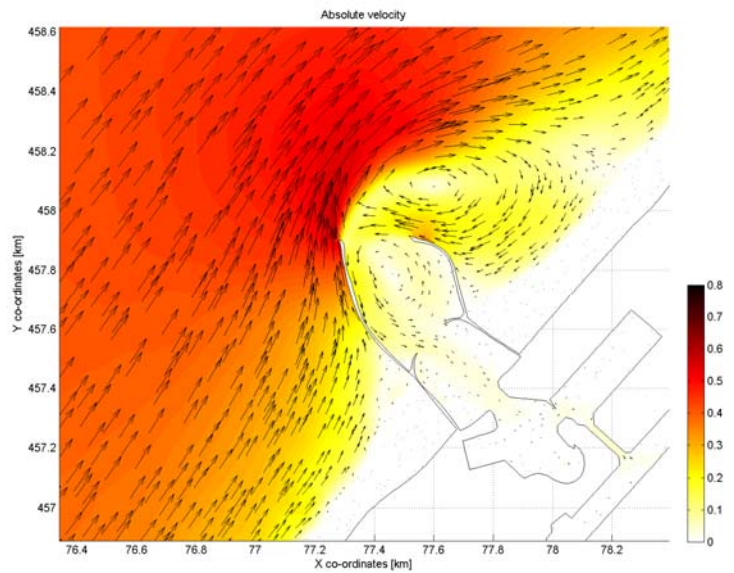
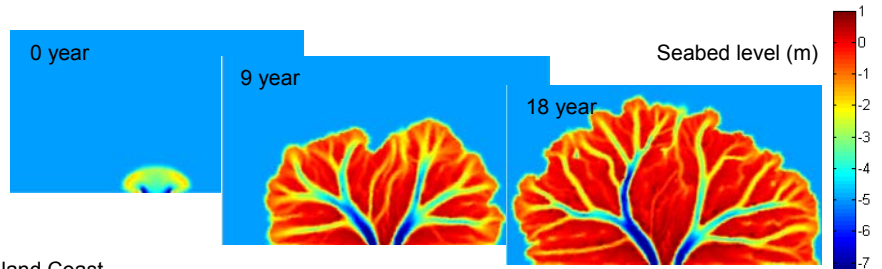


Computational grid with increasing resolution towards Holland Coast



Velocity field close to a harbor entrance



Formation of a delta in time

## FINEL 2D

Within the finite element model package of Svašek Hydraulics, FINEL2D is the two-dimensional numerical flow model.

Based on the shallow water equations, FINEL2D is able to simulate flow and transport processes in rivers and coastal waters. Since FINEL2D contains a robust procedure for drying and flooding of tidal flats it is also suitable to model flow and morphology in estuaries.

The finite element method offers almost unlimited flexibility in grid generation. Special features, like harbour moles, or a complicated coastline can be accurately incorporated in the grid.

MORFIN modules for calculation of both cohesive and non-cohesive sediment transport and the consequent changes in seabed level can be directly linked to the hydrodynamic model. The wave model SWAN can be linked to the hydrodynamic and morphological modules to account for wave-driven currents, current-wave interaction and the stirring of the sediment due to waves.

Parallel computing techniques can distribute FINEL2D computations over several CPU's, enabling large timescales or large grids.

For three-dimensional applications the non-hydrostatic model FINEL3D is available.

**Developer**  
Svašek Hydraulics

**Main features**  
2D flow and transport processes  
in rivers and coastal waters,  
flooding and drying of tidal flats,  
Flexible grid size and shape  
Morphological modules  
Linked to wave model SWAN

**More information**  
<http://www.finel2d.com>

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SV-FINEL 2D