Original project name:
Human Interaction with Large Scale Coastal Morphological Evolution
Project duration: 1.02.2001-31.01.2004
Contract No. EVK3-CT-2000-00037

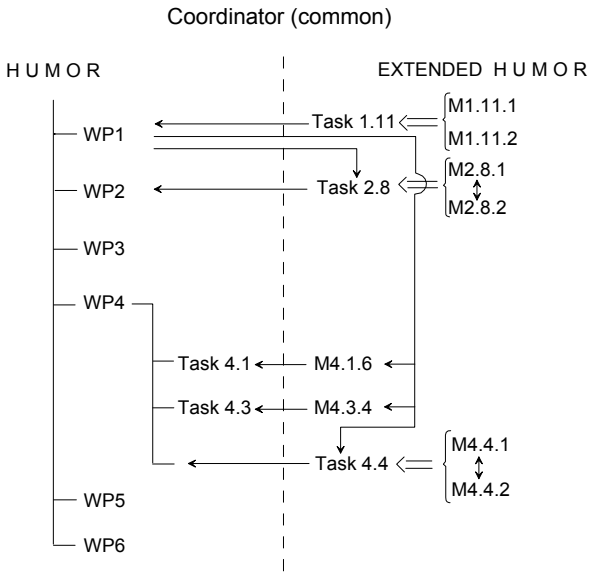
Extension of the ongoing project – addition of the new Contractor:
Institute of Hydroengineering of the Polish Academy of Sciences, Gdańsk, POLAND[1]
Acronym of the extended project: EXTENDED HUMOR
Period of participation: 1.08.2002-31.01.2004

Type of action:	**Research and technological development (R&D) projects**
Thematic programme:	**EESD. Energy, Environment and Sustainable Development**
Call:	**EESD-ENV-2002-NAS**
Sub-programme:	**Environment and Sustainable Development**
Thematic priorities:	**EESD-1999-3.** Sustainable Marine Ecosystems. (Key Action 3) **EESD-1999-3.3.** Monitoring and managing coastal processes and the coastal zone **EESD-1999-3.3.2.** Coastal zone changes **EESD-1999-3.3.3.** Coastal protection against flooding and erosion **EESD-1999-3.3.4.** Coastal processes monitoring **EESD-1999-3.2.** Reducing the anthropogenic impact on biodiversity and the sustainable functioning of marine ecosystems, and facilitating the functioning of safe, economic and sustainable exploitation techniques **EESD-1999-3.4.** Operational forecasting of environmental constraints of offshore activities

Coastal zone areas in Europe, where almost one third of the European total population is living, are suffering from the consequences of non-integrated and excessive uses of coastal resources. Coastal erosion, reduction of harbour operativity, flooding of lowlands and loss of habitat are signs of the continuous degradation of coastal areas, a problem that concerns all the EU.

Persons facing these problems (coastal managers, harbour authorities and other decision makers) in general do not have an overall picture of these questions, and they analyse them locally, not accounting for the influence of their activities on the other activities, nor for the time response of natural and human-induced coastal changes.

However, coastal morphology is the result of a complex multi-scale nonlinear dynamic process that involves waves, currents and sediment transport in interaction with the changing topography. These processes have medium and large-scale components with lengths of the order of hundreds of meters and periods larger than several months. This multi-scale variability makes the management of the coast a question that has to be faced globally in time and space.



EXTENDED HUMOR components: interconnections and links to HUMOR

The ability to understand and predict the medium- and long-term natural evolution of the coast, and the medium- and long-term effects of human actions on the coastal system is, therefore, essential to achieve a sustainable use of littoral richness. Moreover, there is a need for providing the scientific and end-user communities (coastal managers, harbour authorities, etc.) with new, integrated concepts and techniques to survey, monitor and exploit the coastal zone on a medium- and long-term basis.

[1] Contact person: Dr. Rafał Ostrowski, Dept. Coastal Engineering & Dynamics, e-mail: rafi@ibwpan.gda.pl
IBW PAN (IHE PAS), Kościerska 7, 80-953 Gdańsk, Poland, tel. (+48,+58) 5522011, fax. (+48,+58) 5524211
Internet: www.ibwpan.gda.pl

The inclusion of IBW PAN, NAS Institution within the EXTENDED HUMOR project will enhance the Overall and Specific Objectives of HUMOR project, bringing in complementary and new techniques. The technical and scientific objectives will are enriched, in particular in the workpackage features of "Data Sets" (Wp1/DS), "Analysis and Predictive Tools" (Wp2/APT), "Coupling between nearshore bedforms and shoreline evolution in unbounded coasts" (Wp4/UC), as well as – indirectly – "Coastal and Harbour Management Questions" (Wp6/CM).

In particular, the following contribution is provided by IBW PAN:

New Task 1.11 **Field data from the Polish unbounded and interrupted coasts**

M1.11.1 Data from the Coastal Research Station at Lubiatowo

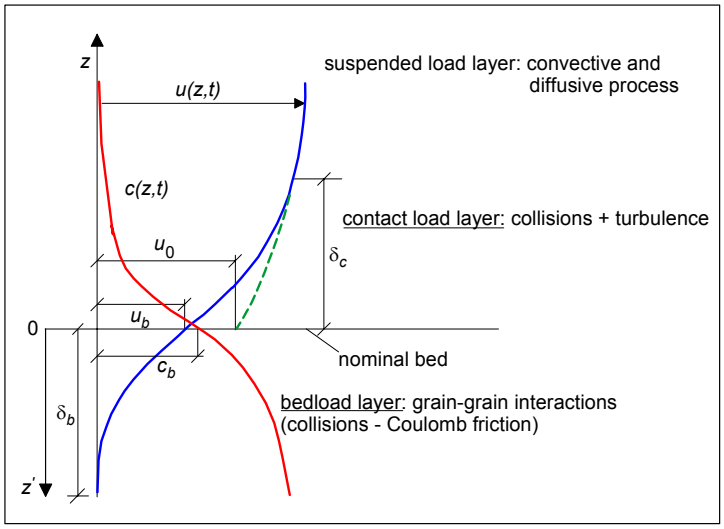
M1.11.2 Data from Władysławowo

Long-term coastal processes at Władysławowo

New Task 2.8 **Quasi-phase-resolving 3-layer water-soil mixture model**

M2.8.1 Verification of the cross-shore profile evolution model

M2.8.2 Verification of the theoretical model of horizontal sorting of sediments on the cross-shore profile



Water-soil mixture three-layer sediment transport model

Additional milestones to existing Tasks

M4.1.6 Analysis of vertical movements of the whole profile and interactions between inner and outer bars at a multi-bar shore

M4.3.4 Determination of self-organized components of shoreline variability using the MSSA cross-correlation analysis.

New Task 4.4 **Morphodynamics of the natural multi-bar sea bed profile**

M4.4.1 Identification of relationships between hydrodynamic phenomena and coastal morphology

M4.4.2 Determination of couplings between inner bars and the shoreline