

Workshop “Design Guidelines for Inland Waterway Dimensions” PIANC INCOM WG 141

Smart Rivers Conference, Lyon, France, Monday September 30th 2019

Introductory words

The report of PIANC INCOM WG 141 with the title “Design Guidelines for of Inland Waterway Dimensions” was released on January 9th 2019. So, you are able to inform comprehensively about the findings. Nevertheless, it seems appropriate to offer more information directly from the experts who wrote the report in the form of workshops. So, if there are questions or if you need help in applying the report to your design problems, you could use the workshop format to make direct contact to the experts of WG 141.

The first workshop is foreseen on September 30th in the framework of the Smart Rivers Conference in Lyon 2019. You are kindly invited to participate to the workshop. It addresses especially engineers and decision-makers in waterway administrations, engineering bureaus, working in the field of waterway design and providers and users of ship handling simulators. Some more information about WG 141 and the content of the report are collected as follows:

The PIANC INCOM WG 141 was founded in 2010 to provide planners of inland waterways with design standards for inland waterways. In 18 meetings and three interim meetings on special questions, the group has undertaken a comprehensive view on guidelines and practice examples as well as methods for detailed design. International standards as well as practice examples show a wide scatter of recommended waterway dimensions. One reason for the differences is the great variety in traffic density but also the tradition of shipping in different countries. Furthermore, especially waterways with significant flow velocities as rivers are a complex system influenced by its varying bathymetry and currents to mention just a few aspects. So it is not appropriate to give just “one” design waterway dimension. Instead a special design method was developed, basing generally on the application of three design methods: “Concept Design Method” (coming from conceptual), “Practice Approach” and “Detailed Design”. Special recommendations will be provided for designing fairways in canals and rivers, bridge opening widths, lock approach length’s and widths and the dimensions of turning basins, junctions and berthing places.

The “Concept Design Method” provides basic dimensions for designing the necessary waterway dimensions. The data came mostly from existing guidelines. In a next step, called “Extended Concept Design Method”, special aspects as wind or currents will be accounted for by providing formulae, derived from approximations of the driving dynamics of inland vessels. The “Practice Approach” collects and interprets data from existing waterways. It is mostly used for comparing and evaluating the results of the other design methods. If the design problem considered cannot be solved with the

Concept Design Method, a Detailed Design will be recommended. It is generally basing on simulation techniques as Ship Handling Simulators. Both Concept and Detailed Design will be supported by a new approach to account for the safety and ease of navigation demands on waterway design (shortly S&E). The report provides also Guide Notes on the optimal use of ship handling simulators for waterway design.

The workshop will provide a comprehensive view into the report of WG 141. It outlines the main findings, especially concerning the content of the national guidelines which form the backbone of the Concept Design Approach, the conclusions drawn from it, the consideration of the necessary S&E quality in applying the Concept Design Method and the Detailed Design using ship handling simulators. Concrete recommendations will be discussed by examples. The workshop offers also space for debates and to discuss questions of the participants. So, please don't hesitate to take part.

Programme

Bernhard Söhngen (Germany): **Introduction to WG 141 approach, findings and content of the report** (45 min.)

Pierre-Jean Pompee (France): **Channel types with special respect to speed, power used and ease quality** (30 min.)

Jean-Marc Deplaix (France): **Safety and Ease Concept by example of the case study Bray-Nogent** (30 min.)

Katja Rettemeier (Germany): **Data behind the WG 141 Concept Design Approach – review of existing guidelines** (30 min.)

Jose Iribarren (Spain): **Examples for comparative variant analysis in using ship handling simulators with special respect to assess ease quality and human factor** (30 min.)

Bernhard Söhngen (Germany):
Application of WG 141 Extended Concept Design Approach by examples (15 min.)

Discussion of projects from the participants (20 min.)

Final discussion (10 min.)