



Annex 4 - Challenge Template

1. Name of the challenge:

- Measurement of wear-resistance and coefficient of friction of newly developed composite material for marine use

2. Context:

- Most marine vessels use sliding bearings with lamellae made out of non-metal materials, such as Tufnol for example, which has good absorption properties when immersed in salt water, but its friction properties are not good enough for prolonged usage, so a new modern composite material should be made and its tribologic properties tested in order to replace the old material.

3. Problem:

- The old lamellae material should be replaced ASAP, because it wears pretty fast and pretty rapidly, which worsens the performance of a wide range of marine vessels.

- This is important because the process it takes for a marine vessel to be pulled-out of the sea for repairs is too long and too expensive which leads to losses. In order for this problem to be solved a new material was developed but in order to be used its properties should be compared to the old material as a proof that it is much better and economically justified. If the new material proves as a worthy replacement it can be used as a replacement for most marine vessels.

4. Additional info (for internal use):

- The team is expected to confirm or deny the tribological properties of new composite material, which is offered as a replacement.

- The team will be provided with samples from new composite material and will be given access to all the machines used for measuring wear-resistance and coefficient of friction.

5. Skills of the team (for internal use):

- Knowledge about sliding (also plain, journal) bearings;

- Knowledge about marine vessels;

5. About the Seeker:



Interreg



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- *The Technical University of Sofia is the largest educational and scientific complex in Bulgaria in the field of technical and applied science with an institutional accreditation grade of 9.5 (on the scale of 10) for the period 2012 - 2018. As the first and largest polytechnic center, which supported the establishment of most of the higher technical colleges in the country, it sets the educational standards and national priorities for the development of engineering education and science.*

Basic information, additional information
www.interreg-danube.eu/da-space