

EconomyPlanner

by

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EconomyPlanner

What is the EconomyPlanner?

- A robust and reliable decision support system
- (Primary) for (inland) navigation
- With the aim to save energy / less harmful emissions
- To adjust the behaviour of the skipper
- So that the time of arrival will be realized

EconomyPlanner

How to achieve?

- **Optimization of the speed** of the vessel responsive to the observed changes in fuel consumption
- **Anticipating on changes** in the fairway that will occur
- **Anticipating on the trip schedule** where the desired time of arrival at the destination, or at the lock (lock-planning), is important

Plan of approach

Roadmap

- **Step 1:** Creating of a robust “cruise control” (de base)
- **Step 2:** Sharing experiences
- **Step 3:** Being able to anticipate on future changes in the fairway
- **Step 4:** Identify the optimal track through the fairway
- **Step 5:** Realizing the voyage planner
- **Step 6:** Take the voyage planner into account

Plan of approach

Step 1: The “Cruise Control”

Calculate the most economically propulsion power for this situation (RPM)

Based on:

- The measured fuel consumption
- The measured propulsion power (RPM)
- The measured ground speed

Plan of approach

Step 2: Sharing experiences

- Individual obtained data will be collected on a server
- Developing a “comparison factor”
- The more vessels, the more “experiences”
- Sharing these “experiences”
- The result; a better calculation of the economically propulsion power (RPM)

Plan of approach

Step 3: Being able to anticipate on future changes in the fairway

- The acquired “experiences” shows which parts of the fairway gives a lot of “resistance” to the progress of the voyage
- **What?** Anticipating on changes in the fairway
- **How?** Prior to the part, which gives “resistance”, we reduce propulsion power (RPM)
- **Result?** Fuel saving / less emission and the vessel will overtake faster the part of the fairway which gives “resistance”

Plan of approach

Step 4: Identify the optimal track on the river

- Using the “experiences”
- Indicate the most optimal (economic) "track" through the fairway
- Taking into account the available water level, loaded weight and depth of the vessel

Plan of approach

Step 5: Realizing the voyage planner

- Is an essential component of the system to calculate the most economical propulsion power at a fixed ETA
- A compromise between the most economical propulsion power with a maximum of fuel saving and the factor “time”
- Can built by ourselves with static data from the fairway on the one hand, and secondly, the “experiences” from the central database such as the maximum achievable speed on a certain track

Plan of approach

Step 6: Take the voyage planner into account

- The voyage planning has in many cases directly affect on the progress of voyage
- The speed of the vessel must be adjust during the voyage to the (hard) requirements resulting from the planning of the voyage
- Optimize the voyage planning by using all the knowledge available on how the fairway will be

Spin-offs

Possible Spin-offs

- A link with initiatives such as terminal- and lock -planning
- Better defining of the maximum possible loading depth
- Control an autopilot
- Inform the waterway authorities with demonstrable information of part of the fairway with some “resistance”
- Track & Tracing
- Fleet management

Questions?

Thank you for your attention