



Request to express interest in creating a pan-European synchromodal research & innovation project.

To: whom it may concern

Partner group: University of applied sciences

From: Ron van Duin PhD (Rotterdam UAS), Kristel Alons PhD (Fontys UAS), Guy Somers MSc (Fontys UAS), Pascal Swinkels MSc (Fontys UAS), Steve Ekel MLM (Rotterdam UAS).

Initiative is supported by: ...

Subject: Request to express interest in creating a pan-European synchromodal research & innovation project.

Date: 4 September 2020

Would you like to be part of a collaborative and innovative project proposal for a pan-European EU-funded research project to apply our award-winning model?

Introduction

Fontys University of Applied Sciences has developed a maturity model to create awareness among companies about several aspects of organizing intermodal and synchromodal transport. Together with Rotterdam University of Applied Sciences and other parties this Award winning maturity model¹ has been applied by more than 80 companies in the Netherlands and Belgium. We are eager to expand the geographic application of the model with partner universities. More information about previous projects, can be found in Appendix 1.

Planning

We aim to submit the project plan for EU funding by mid-2021. As of September 2020 we start recruiting consortium partners. Depending on the chosen European subsidy program (or programs) the project will take between 3 and 5 years to execute. Aim is to organize brainstorm meeting(s) multiple interested partners in Autumn 2020. In order to build strong partnership and future EU funding application(s)

Final objectives and products

- Development of online logistics curricula for universities and businesses focusing on intermodal transport.
- Application of further developed maturity model in several regions within Europe.
- Help companies to reduce the European carbon footprint of container transports.
- Regional and corridor analysis to advice local and national governments at policy level.
- Develop and support new business cases based on data analysis of the project database.

¹ Alons-Hoen, K., Somers, G., & van Duin, R. (2019). [Moving from intermodal to synchromodal transport: A maturity model applied to a case study in North Western Europe](#). In *Proceedings of 2019 TRB Annual Meeting* (pp. 1-10). Transportation Research Board (TRB).



Below you can find an introduction on possibilities for Universities of Applied Sciences. Interested in participation? Please reply before 26-6-2020.

What's in it for you?

Below you can find a list of possible benefits for you as potential project partner. We are open to discuss other activities based on your expertise.

Education

First of all, the project can assist in developing curricula on intermodal and synchromodal transport by offering workshops, train the trainer sessions and e-learning modules. It is a unique opportunity to enhance logistics curricula, with theory and many different company cases, both online and offline. Let's think about this together!

The e-learning modules focus on the basics of intermodal and synchromodal transport. Next to that, we can offer workshops and train-the-trainer sessions for teachers and students that will work with the Synchro Maturity Model.

Development and application of a maturity model

The Synchro Maturity Model is being developed and enhanced on a continuous basis. There are opportunities to extend it vertically by adding more detail or horizontally by increasing the scope. The model can be extended technically by creating an online version or portal.

Students of your university can contribute by conducting interviews in which the model is applied to companies in your region. This creates a win-win-win: students get experience in performing practical research, the valuable results are combined in a publication and companies get practical feedback.

Individual follow up companies (quick-scan)

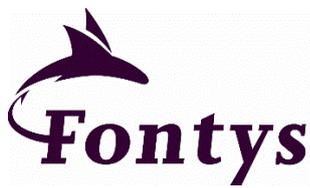
The model can be applied to shippers, forwarders and logistics service providers. Companies that participate in an interview get a practical advice on the current status and an advice on how to develop to a higher maturity level in intermodal or synchromodal transport taking into account the strategy and long term plans of the company. Finally, benchmarks with other companies will be given. These benchmarks are based on data from the own region and others regions within the database. The company cases can then be used in your curricula.

Analysis of results

All collected results from the interviews are stored in a database. The pan-European consortium, and in particular Rotterdam University of Applied Sciences and Fontys University of Applied Sciences, are at all times administrator and responsible for the database. As a partner you can use the data from your own research region from the database. Based on the data analysis, recommendations can be made to improve the performances of local companies and local policies.

General advantages, valorization and dissemination

We are looking forward to collectively publish scientific articles on the status of intermodal and synchromodal transport in Europe and the maturity model. This pan-European project offers the opportunity to extend your knowledge network in the field of intermodal and synchromodal transport.



Your role within the consortium

Within the project a pan-European consortium is created for the overall design, coordination and execution of the project. Next to that, we aim to form several focus groups for the application of the Synchro Maturity Model.

As a university of applied science you can join the consortium in different ways, either as a lead partner or as a regular partner. Lead partners have a central role within the project by taking the lead in certain previously defined project areas. Regular project member perform research within their own region.

Based on your experience we can jointly decide what your role in this project would be. Therefore we have made a small table to fill in and to send together with your interest back to us. In that way, we will get an overview of everyone's knowledge and experience.

Experience	Number of projects	Names of projects	Your role(s)	Number of employees involved	References
European research projects					
Research in intermodal transport					
Logistics education development					



References:

Alons-Hoen, K., Somers, G., & van Duin, R. (2019). [Moving from intermodal to synchronomodal transport: A maturity model applied to a case study in North Western Europe](#). In *Proceedings of 2019 TRB Annual Meeting* (pp. 1-10). Transportation Research Board (TRB).

Alons-Hoen, K., van Duin, R., & Somers, G. (2019). [The current state of Synchronomodality: an application of a synchronomodal maturity model on case studies](#). *LOGISTIEK Tijdschrift voor toegepaste logistiek*, 8, 116-131

van Duin, R., Warffemius, P., Verschoor, P., de Leeuw, A., & Alons-Hoen, K. (2019). [Synchronomodal transport: From theory to practice: Case study port of Rotterdam: Identifying the success/fail factors](#). In *Proceedings of 2019 TRB Annual Meeting* (pp. 1-11). Transportation Research Board (TRB)

Mueller, M., Wiegmans, B., & van Duin, R. (2020). The geography of container port choice: modelling the impact of hinterland changes on port choice. *Maritime Economics & Logistics (online)*, 22(1), 26-52. <https://doi.org/10.1057/s41278-019-00142-6>

Alons, K. (), Somers, G. (), & van Duin, R. () (2019). In vier stappen van intermodaal naar synchronomodaal transport. Web publication/site, Vakmedianet. https://www.logistiek.nl/supply-chain/blog/2019/02/in-vier-stappen-van-intermodaal-naar-synchronomodaal-transport-101167120?vakmedianet-approve-cookies=1&_ga=2.251518406.1576582297.1550831284-285393092.1550831284

<https://www.researchgate.net/publication/331276805> In vier stappen van intermodaal naar synchronomodaal transport (Dutch)

Somers, G. & Tissen, K., (2016). Literatuuronderzoek Synchronomodaal Transport. <https://www.kenniscdcllogistiek.nl/publicaties/literatuuronderzoek-synchronomodaal-transport> (Dutch)

Appendix 1

Need for synchronodal transport

Logistics transport can choose from several transport modalities like road transport, inland shipping, rail transport, air freight and pipeline. Europe wants to drastically decrease the share of road transport. Road transport is often still the preferred modality but costs are expected to rise in the near future taking into account increased traffic jams and possible tolls. One of the opportunities is to shift to inland shipping and rail transport to reduce emissions and costs. Within Europe the plans to reduce CO₂ emissions are bundled in the Green Deal.

<https://www.euronews.com/2020/01/14/eu-commission-to-unveil-green-deal-to-make-europe-the-first-climate-neutral-continent>

The usage of multiple modalities for transport is called intermodal transport. As CO₂ emissions become more stringent, companies will have to move away from road transport. To make inland shipping and rail transport suitable alternatives for road transport some changes have to be made. Synchronodal transport exploits flexibility, sustainability and efficiency to aim for a united transport network within Europe. See below for a short definition of synchronodal transport.

'Synchronodality is the transport of maritime freight flows from port to hinterland destination or vice versa - without changing the load unit - whereby real-time changes can be made in the flexible and sustainable use of different transport modalities in a network. The logistics service provider has the control to offer optimally integrated solutions for all parties'. (KennisDC Logistiek Limburg, 2015)

Project history

Fontys has developed a maturity model to create awareness among companies about several aspects of organizing synchronodal transport. See figure 1 on next page. The maturity level of companies is assessed by means of a questionnaire. The questions for these company interviews have been developed and validated by employees of Fontys University of Applied Sciences and Rotterdam University of Applied Sciences. In 2018, more than 25 companies were interviewed with the help of a semi structured questionnaire.

In the follow-up project in 2019 29 companies have been interviewed. The results from the online questionnaire are reported in an online survey tool, developed by Fontys. The questionnaire is applied to companies in the Rotterdam region by bachelor students of Rotterdam University of applied sciences. Results have been published and will be presented at the Netherlands Conference on Operations Management and Logistics. Next to that, follow up is given to the questionnaire, in a new project the questionnaire is applied in two other regions.

[Link to online questionnaire](#)

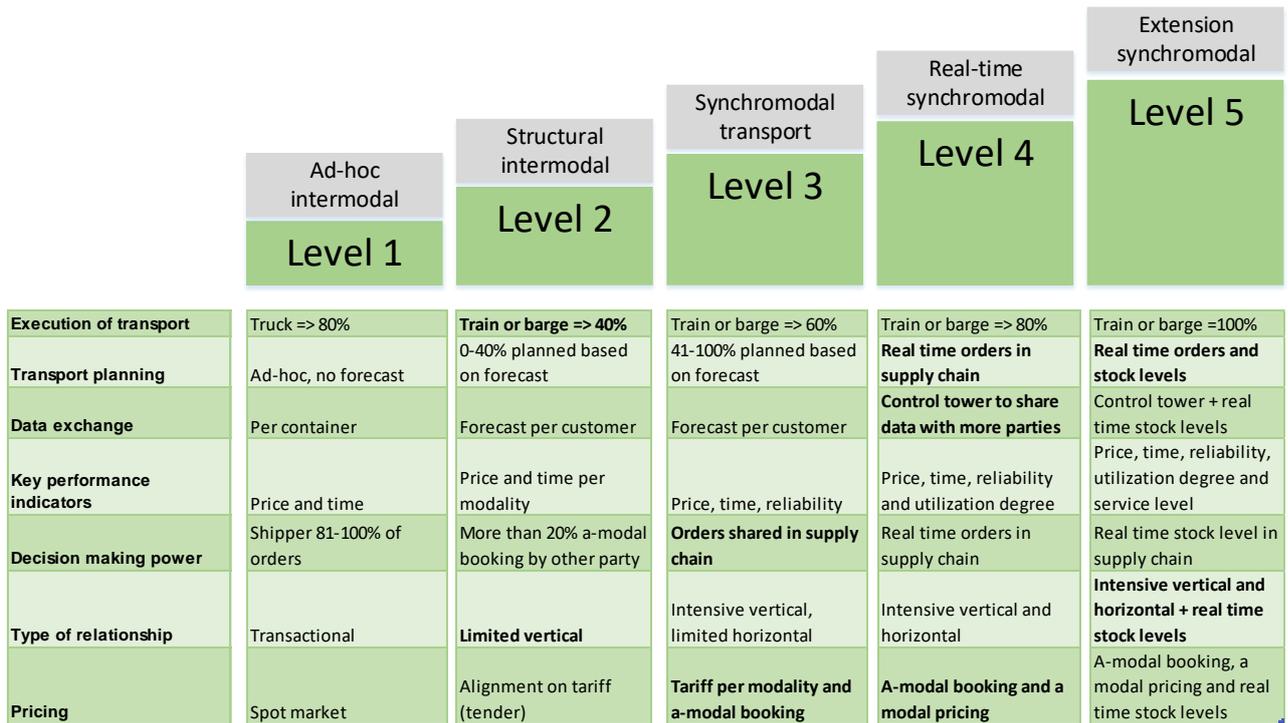


Figure 1: Synchro Maturity Model

The results of the survey are consolidated in an Excel model. This model generates a PDF report that contains an analysis on the current state of intermodal transport but also an advice on how to progress in the maturity model and includes a benchmark based on similar companies. In a second interview students discuss the report with company which allows for further fine tuning.

The method of data gathering, analysis and reporting has been standardized, which provides opportunities to apply the maturity model to other regions in the Netherlands and Europe. So far it has been applied to three regions in the Netherlands (Limburg, Gelderland and the Rotterdam region) and two regions in Belgium (West Flanders and Limburg), see figure 2.



Figure 2: Regions



Several articles have been published based on these projects. One paper worth mentioning is a publication about the application of the maturity model within the Interreg project SYN-ERGIE. This paper won the Private Sector Applicability Award at the Annual TRB conference 2019 in Washington.

https://www.researchgate.net/publication/330579408_MOVING_FROM_INTERMODAL_TO_SYNCHROMODAL_TRANSPORT_A_MATURITY_MODEL_APPLIED_TO_A_CASE_STUDY_IN_NORTHWESTERN_EUROPE/stats

Further research within Europe

The maturity model has proven to be applicable in two countries and Europe and has shown potential to apply in other parts of Europe to help companies with making the important step from road transport towards intermodal (and synchronomodal) transport. By using this model, an acceleration can be made in European policy to reduce CO₂ emissions. As goods flow do not stop at the Dutch borders, application of this model should also not stop at the border.

This model can be applied for hundreds of companies that are close to major container ports or for companies that have potential to start implementing intermodal transport, since they handle large volumes of container transports. By means of this model, Fontys, Rotterdam University of Applied Sciences and its partners can contribute to the policy plans of Mr. Timmermans and Mrs. Von der Leyen.