ecoTAURuS – the EcoHubs Truck Appointment & Unit Status Service

ecoTAURuS: a new breed of software services for green terminals

ecoTAURuS is an innovative e-transport solution for real time truck – terminal collaboration, designed specifically to speed up and optimise the loading and unloading process in multi-modal terminals[1].

ecoTAURuS delivers a service that allows stakeholders around a group of terminals to increase their effectiveness and optimize their operations through the <u>seamless integration of truck appointments systems and the consolidation of unit status data from multiple sources</u>. The system is suitable for terminal and intermodal operators, trucking companies, truckers, and dispatchers, who are in need of the above mentioned capabilities.

ecoTAURuS has been designed and configured to run on smart mobile phones and belongs to a new breed of terminal software services which can be seamlessly integrated with back office systems, able to connect and exchange information with systems regardless if these are made of Legacy or Web 2.0 enabled technologies.

ecoTAURuS offers:

- **Business innovations**: Process improvements addressing gaps / weaknesses of existing practices particularly from a collaboration perspective between terminals and their users, offering new services, such as consolidation of logistic chains and increased utilisation of resources.
- **Technology innovations:** secure connectivity infrastructure for terminal stakeholders through Access Points and integration tools for Terminal Community creation and support (enables the newcomers to 'connect once and talk to everyone' lowering the economic barriers to connect for budget sensitive SMEs. Further, intuitive smartphone interfaces add to user acceptability.
- **Capacity building**: availability of highly cost effective solution and freeware (Access Points, Mobile apps, best practice process and data templates for easy configuration and agility) for SME participation.

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[1] supported via the European FP7 Research and Development EcoHubs project (http://www.ecohubs.eu/

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Functionalities and Differentiators – Unique value propositions

ecoTAURuS was conceived & built based on the requirements of two terminal operators (IFB[2] & Adria Kombi[3]), and fully tested in the both locations. In a nutshell, it provides:

- **Unit Order Management**: supports the retrieving, sending and providing visibility on Unit order information from multiple sources, along with shared visibility of preferred unit loading/unloading slots **to maximize the potential for direct loading/unloading**.
- **Integration with multiple Terminal and other Systems**: supports the seamless collection of Track Appointment Reservations, Visit/Call IDs, slot availability, TOS generated events,
- **Trip Order Management**: supports the retrieving, updating, sharing of information from multiple sources to optimise Trip Order Management
- **Trucker Mobile Interface**: supports the receiving/accepting Trip Orders from multiple sources, reporting Unit Status, receiving notifications, transmitting GPS data
- **Automated Incident Notifications**: provides notifications for unit delays, traffic data, terminal capacity/congestions/equipment failure through secure channels to the responsible actors/roles
- **Information Exchange/Authentication**: enhances security and information protection through a single Access (Entry) Point, alleviating the routing concerns for messaging
- **Measurement:** seamless connection and streaming data flows with measuring and benchmarking application for decision support, process monitoring, and strategic planning.

Adoption Approach

ecoTAURuS is a solution that can either be offered as a service (SAAS), or installed and operated from the Customer's IT infrastructure.

ecoTAURuS initial setup, in most cases include integration with an existing Unit Order feeding mechanisms, TOS's Appointment system and Slot Availability Service (if offered by TOS – as far as ecoTAURuS concerns, slots duration is fully customizable). These integrations can be achieved within one or two weeks, and there is no need for any further application modifications, or disinvestment.

If a Truck Appointment system is already in place, then there is absolutely no change in the Terminal's operational routine. Trucking companies would have however to adopt the new User Interface, if they wish the exploit the relevant benefits.

If on the other hand, ecoTAURuS is introduced as the new Truck Appointment System, then all involved parties will have to move from manually paper-based appointment arrangement to the electronic one. A few hours training has been proved sufficient for smooth transition.

Cost-wise, ecoTAURuS follows a very flexible revenue-sharing approach. Pricing is scalable based on the number of Unit Orders handled by the application. As a minimum number of handled Unit

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[2] http://www.interferryboats.be/
[3] http://www.adriakombi.si/

Orders we consider the 20,000, with the ecoTAURuS cost per handled Unit starting from 0.1euro. Although there are obvious benefits of the standalone solution adoption, it is however crucial that interrelated terminals and trucking companies embrace this solution, if they wish to maximize their benefits. The later scenario, is certainly the safest way for the solution's sustainable profitability.

Benefits

Terminal Business Drivers

- Optimize Terminal Operations
  - Improved awareness of expected truck visits on a multi-terminal perspective and plan/minimize own resources through proactive load-balancing. Existing Truck Appointment solution, limit their reach in a single terminal.
  - Minimize truck queuing and required space for relocating traffic from public road network
  - Minimize/speed-up Trip Arrangement Administrative effort (reducing cut-off time). This is a benefit of every Truck Appointment system, however though ecoTAURuS, the solution reach expands to a significant larger user-base, including nearby Terminal users.
  - Improve direct loading ratio with better appointment system. ecoTAURuS introduces and fully supports the new concept of the preferred loading/unloading slot, through which the Terminal Operators can direct their traffic into those slots, offering incentives to the involved parties.
- Improve synchronisation between truck and rail scheduling
- Improve Terminal Customer Experience
  - Expand Unit Visibility beyond terminal yard operations (also User Interface for small companies). Existing solutions, limit Unit visibility on Terminal yard and Railway Operators. ecoTAURuS, enables all involve parties to monitor their Units in the last mile, in a unified, transparent approach.
  - Reduce waiting times, better turn-around and increased Truck Load Factor. ecoTAURuS, through the end-to-end Trip visibility and control, increases the planning prospect and enables dispatchers to increase the load factor taking into account Unit Order demand in other Terminals.
  - Enhance Terminal Operations visibility
- Access Point infrastructure: Low cost, easy to use information sharing. Existing solution, are based upon the establishment of one to one connectivity for message exchange. Through the AP infrastructure each network stakeholder connects once into the infrastructure and seamlessly acquires access to each and every stakeholder within the AP network.
- Improve Terminal Public Image: Environmental – Reduce CO_2 emissions

Trucking Business Drivers

- Optimize Trucking Operations
  - Minimize Trip Arrangement Management Cost through easy integration with multiple TOS systems. Existing solutions, only address a single Terminal visit. For a multi-Terminal trip, the Trucking companies will no longer need to adopt and use multiple User Interfaces.
  - Reduce waiting times, better turn-around and increased Truck Load Factor

- Minimize cost/effort for Unit Status Collection through Trucker's mobile interface, expanding Unit Status awareness not only beyond a single terminal, but also to the final Unit drop-off or pick-up locations.
- Improve Control and Customer Service
  - Enhance Unit Status Awareness. Trucking companies' Customers will have real-time visibility of Unit Status, in both multiple Terminals as well other destination locations. Through the forthcoming integration with CESAR, widely used tool will be expanded to include last mile Units events fed by ecoTAURuS.
  - Enhance Terminal Operations visibility

The technology Drivers

EDI, first used in the commercial sector in the 1980s to support document exchange in the transportation sector, remain a valid solution for exchanging selected information between a wide range of business port/ terminal partners. The advent of Comprehensive Integration Solutions (CIS)[4] now allows firms to address their EDI needs along with their application and process integration requirements in one solution.

The EcoHubs infrastructure supports the implementation of innovative Value Added Services by enabling the configuration and setup of applications, integrating specialised components for end user functionality delivery, data exchanges and information provision. The infrastructure is highly flexible acting as a network enabler and solution provider at a fraction of the cost of older technologies allowing terminals to upgrade their systems and SMEs to join the digital economy.

Forthcoming Implementations

Adria Kombi [5]

The Ljubljana based multimodal operator, represented by Mr. Janez Merlak, has decided that ecoTAURuS is a fit for their needs solution, since it seamlessly integrates AK's existing infrastructure (KM2 – for Unit Orders and Trip Planning), it is a customizable Truck Appointment and Unit Status reporting system, that can facilitate unified planning and Unit status visibility throughout their network of cooperating Terminals as well as Last Miles providers. Another, highly appreciated feature of ecoTAURuS, is the introduction of the Preferred Slot concept, through which AK foresees significant savings from minimizing the Terminal moves, through increase direct loading/unloading. For this, AK has already signed a contract to participate in the Early Adopters program (with an initial 6 month trial period, plus an additional year of production utilization). AK has invested significant resources to actively provided feedback for the solution improvement and evolution to serve the specific needs of their business network.

Interferryboats[6], Antwerp

IFB, represented by Mr. Frédéric Buyse, recognized the innovative elements of ecoTAURuS, that effectively addressed the business case of their Antwerp Terminal. IFB's Terminal has intensive unit transportation traffic with it's neighbour PSA Terminal. An overlay Truck Appointment system, that would transparently allow the interaction with both TOSs, and facilitate fast and easy planning of cross-terminal

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[4] Ken Vollmer, Phil Murphy, Sander Rose, CIS Reference Architecture Model, Forrester Research, April 2010

[5] http://www.adriakombi.si/
[6] http://www.interferryboats.be/

trips, through a unique interface, has been identified as the ideal solution. This solution has been materialized through ecoTAURuS, including an extremely user-friendly mobile interface that enhances the user experience and trip status awareness. ecoTAURuS has been demonstrated and thoroughly tested in real life conditions, and proved to serve the purpose. IFB, is next to join the ecoTAURuS early adopters program.