

UNIVERSITY OF TARTU
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Conversion Master in IT

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**"Unbundling Real-Time Passenger Information
System. A Case Study of Ridango"**
Master's Thesis (15 ECTS)

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Unbundling Real-Time Passenger Information System. A Case Study of Ridango

Abstract:

Urban travel demand has been steadily growing in both developed and developing countries [1]. The overall population growth and increasing urbanization all over the world have led to fast growth of large cities, which are now struggling with the abrupt rise in travel demand [1]. The larger a city, the greater its complexity and the potential for service interruptions and disruptions, especially when this complexity is not effectively managed [1].

Growth of urban travel demand and the need to effectively manage public transport has increased the need for Real-Time Passenger Information Systems [2], [3]. Hence Ridango AS has recognized the potential benefits and importance of developing its Real-Time Passenger Information System to an independent, unbundled product.

In the light of this context, this thesis addresses the research question of what are the requirements of an independent Real-Time Passenger Information System. This is achieved by means of a case study carried out on Ridango AS current Real-Time Passenger Information System. For making the proposals to unbundle the current Real-Time Passenger Information System from the Ticketing Solution, the topic of software unbundling through literature analysis and the user needs and expectations through the conducted interviews are analysed. Based on these analyses, a prototype of the minimum viable product of the unbundled Real-Time Passenger Information System is created. Thereafter the prototype is also tested and evaluated in a case study. The collected data is analysed from the perspectives of understandability, relevance, completeness, usability and usefulness.

Keywords: public transport, real-time passenger information system, software unbundling, minimum viable product

CERCS: P170 Computer science, numerical analysis, systems, control

Reaalaja infosüsteemi tootestamine. Ridango AS juhtumiuuring

Lühikokkuvõte:

Nõudlus ühistranspordi järele on pidevalt kasvanud nii arenenud riikides kui arengumaades [1]. Rahvastiku üldine juurdekasv ja linnastumine kogu maailmas on viinud suurte linnade arvu kiire kasvuni, mis on omakorda kaasa toonud suurenenud nõudluse ühistranspordi järele [1]. Mida suurem on linn, seda suurem on selle linna ühistranspordi ning ka transpordisüsteemi keerukus ja ühistranspordi teenuse katkestuste tõenäosus, eriti kui seda keerukust ei suudeta tõhusalt hallata [1].

Nõudlus efektiivse transpordisüsteemi järele ning vajadus selle tõhusaks korraldamiseks ja haldamiseks on suurendanud vajadust ka ühistranspordi reaalaja infosüsteemide järele [2], [3]. Ridango AS ambitsioon on vastata kasvanud turunõudlusele ning arendada kasutuses olev reaalaja infosüsteem iseseisvaks tooteks.

Magistritöö eesmärk on leida vastus küsimusele, millised on nõuded iseseisvale reaalaja infosüsteemile. Selleks viiakse läbi Ridango AS-i reaalaja infosüsteemil põhinev juhtumiuuring. Magistritöös kirjeldatakse Ridango AS-i olemasolev reaalaja infosüsteem, analüüsitakse läbi teoreetiline kirjandus ning viiakse läbi intervjuud. Võttes arvesse analüüsi tulemusel kogutud tähelepanekuid, luuakse minimaalse töötava toote prototüüp ehk minimaalselt töötav toode eraldiseisvast reaalaja infosüsteemist Minimaalset töötavat prototüüpi sobivust katsetatakse juhtumiuuringus.

Võtmesõnad: ühistransport, reaalaja infosüsteem, toote arendamine, minimaalselt töötav toode

CERCS: P170 Arvutiteadus, arvutusmeetodid, süsteemid, juhtimine, (automaatjuhtimisteooria)

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