UNIVERSITY OF TARTU
Institute of Computer Science
Conversion Master in IT Curriculum

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Digital Product Management: Digital Refrigerant Management System

Master's Thesis (15 EAP)

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Digital Product Management: Digital Refrigerant Management System

Summary:

Danfoss A/S has developed a machine learning, data-driven based refrigerant leak detection algorithm that will detect small leaks in refrigeration systems without the addition of any leak detection hardware (provided that a Danfoss AKV valve and controller are used) and have a concept for a digital refrigerant logbook to help track refrigerant use. The scope of this project was to review digital product management methods and to apply the methods to create a digital product strategy for Danfoss' digital refrigerant management system. The following digital product management principles were used in creating the strategy: business model development, ideation & user research, minimum viable product, requirements, user experience, user testing, risk management and release management.

Keywords: refrigerant, data-driven leak detection, product analysis, product management, machine learning

CERCS: T120

Digitoodete juhtimine: digitaalne külmutusagendi haldamise süsteem

Lühikokkuvõte:

Danfoss A/S on välja arendanud masinõppel põhineva andmejuhitava külmutusagendi lekete avastamise algoritmi, mis tuvastab jahutussüsteemides tekkivad väiksed lekked ilma täiendavate seadmeteta (eeldusel, et kasutatakse Danfoss AKV-ventiile ja kontrollereid) ja jälgib külmutusagendi tarbimist digitaalse logiraamatuga. Käesoleva magistritöö eesmärk on anda ülevaade digitoodete juhtimise meetoditest ja rakendada neid meetodeid, et koostada Danfossi digitaalse külmutusagendi haldussüsteemi digitoote strateegia. Strateegia koostamisel kasutati järgmisi digitoodete juhtimise põhimõtteid: ärimudeli arendamine, mõtteloome ja kasutajauuring, minimaalne töötav toode, nõuded, kasutajakogemus, kasutajatestimine, riskihaldus ja väljalaske haldus.

Võtmesõnad: külmutusagent, andmejuhitav lekketuvastus, tooteanalüüs, tootehaldus, masinõpe

CERCS: T120

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supervised by Eduard Ševtšenko

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17/05/2022