LOCATION BASED MULTI AGENT SOLUTION FOR DISTRIBUTED SERVICES

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Degree of Master of Science in Artificial Intelligence

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Declaration

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Date:

The above candidate has carried out research for the Master's thesis under my supervision.

Name of the supervisor: Signature:

Prof. A.S. Karunananda.

Date:

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Abstract

Attending an emergency service break down in fields such as water, electricity, fire and gas in a domestic environment to find a service provider has been an issue for a technically non competent person or a disable person. Even technically competent person sometime cannot take quick decisions in such emergency situations.

In day today life we always expect support or services from other people and people do businesses providing services. Services such as vehicle/ three wheel hiring, technician's service of carpenter/plumber, goods transport, ambulance service, tuition classes and consultancy, we need services from other parties. The main thing is we can enjoy the service if it is provided by most suitable person on required time at required place. But most of the time we are unable to have satisfied service from correct service provider on required time due to not awareness about suitable service providers. Service providers like Uber, Pick Me provides this kind of services but limited to vehicle hires in Sri Lanka and there are lots of systems for taxi dispatch in the world, but it is hard to find common system for distributed services. Handling this kind of problems in dynamic, distributed and complex environment with involve uncertainty is a very crucial process. Multi-agent systems are in the domain of distributed artificial intelligence and it presents an alternative way of designing distributed control systems with autonomous and cooperative agents. Those agents there exhibit modularity, robustness, flexibility and adaptability. A research has been conducted to develop a multi agent based solution to find most suitable services and service providers even if client does not have knowledge about the area of domestic service or the issue. We have developed a Software for client to enter required parameters and request a particular service. In this situation service providers are registered in the system and distributed over the island and they are waiting for a request from a client. System has been tested while doing developments and we obtained encouraging results for leading formal evaluation.

Keywords. *Agents, Complex systems, Multi-agent systems*

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