

**DYNAMIC USER MANAGEMENT MODEL IN INTERACTIVE NETWORKED  
COLLABORATIVE ENVIRONMENT**



**RESEARCH MANAGEMENT INSTITUTE (RMI)  
UNIVERSITI TEKNOLOGI MARA  
40450 SHAH ALAM, SELANGOR  
MALAYSIA**

**BY:**

**SITI ZALEHA BINTI ZAINAL ABIDIN  
NASIROH BINTI OMAR  
ZAINURA BINTI IDRUS  
ZANARIAH BINTI IDRUS**

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## Contents

1. Letter of Report Submission .....	iii
2. Letter of Offer (Research Grant).....	iv
3. Acknowledgements .....	v
4. Enhanced Research Title and Objectives.....	vi
5. Report.....	1
5.1 Proposed Executive Summary .....	1
5.2 Enhanced Executive Summary .....	2
5.3 Introduction .....	3
5.4 Brief Literature Review.....	4
5.5 Methodology .....	7
5.6 Results and Discussion.....	9
5.7 Conclusion and Recommendation.....	13
5.8 References/Bibliography .....	14
6. Research Outcomes .....	16
7. Appendices .....	17
Appendix A: Published Papers	
Appendix B: Submitted paper for review	

## 2. Letter of Offer (Research Grant)

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**Prof. Madya Dr Siti Zaleha Zainal Abidin**  
Fakulti Sains Komputer dan Matematik  
Universiti Teknologi MARA  
40450 SHAH ALAM

Y. Bhg. Prof/Prof. Madya/Dr./Tuan/Puan

### KELULUSAN SKIM GERAN PENYELIDIKAN FRGS FASA 02/2010

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Dengan hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan pihak Kementerian Pengajian Tinggi melalui surat JPT.S(BPKI) 2000/011/010 Jilid. 4 (4) telah meluluskan cadangan penyelidikan Y. Bhg Prof/Prof. Madya/Dr./Tuan/Puan untuk di biyai di bawah Skim Geran Penyelidikan Fundamental (FRGS) Fasa 02/2010.

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Sekian, harap maklum.

**“SELAMAT MENJALANKAN PENYELIDIKAN DENGAN JAYANYA”**

Yang benar

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Pejabat Am : 603-5544 2559/2057/5521 1636

Penolong Pentadbiran : 603-5544 2090  
Fax : 603-5544 2096/2767  
Unit Kewangan Zon 17 : 603-5544 3404  
: 603-5521 1386



Research Management Institute (RMI) Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia  
<http://www.rmi.utm.edu.my>



## 5. Report

### 5.1 Proposed Executive Summary

Interactive networked collaborative virtual environment (NCVE) provides ways for people to work together, faster and cheaper despite of locations. Results can be achieved without travelling time and spending more money. Unfortunately, users' existence is not visibly presence which results in lacking of user participation that seriously degrades communication quality. This leads to misinterpretation of vital information and jeopardize the group work. Therefore, it is crucial to present users so that others know with whom they are interacting with (presence), when to communicate (state) and what to do (role) during the collaboration.

This research investigates the activities of users in order to identify all the possible job functions exist during collaboration. Then, their job functions are classified in relation to the management of dynamic invisible users (their presence, states and roles). The users' role, presence and state will be generalized to form a generic management model of dynamic users based on logical notation. This work employs data collection through literature review and a case study. For a case study, a monopoly game will be implemented by changing some of its rules to gather all the possible roles exist throughout the game. The game is also used as a platform to do an abstraction of real life phenomena. A mapping of users' job functions found in both literature review and the case study will be conducted to produce comprehensive elements for managing users in collaborative systems. All the elements and their relations are classified and represented as a set of mathematical equations.

The model helps to manage users dynamically throughout the collaborative session. This session-based dynamic role feature is rarely found in any collaborative work as compared to application-based role. Furthermore, managing users in virtual space is challenging because it involves security, privacy and permission to information resources.

## **5.2 Enhanced Executive Summary**

(Abstract of the research)

Interactive networked collaborative virtual environment (NCVE) provides ways for people to work together despite of locations. Unfortunately, users are not visibly presence that can degrade communication quality. This leads to misinterpretation of vital information and jeopardize the group work. Therefore, it is crucial to manage users so that they are aware of others (presence), when to communicate (state) and what to do (role) during collaboration.

This research investigates activities of users in order to identify possible job functions during collaboration. The job functions are classified in relation to their conditions (presence, states and roles). The condition is generalized to form a generic management model of dynamic users. This work employs data collection through literature review and a case study (a monopoly game). The game is used as a platform of an abstraction of real life phenomena. A mapping of users' job functions found in both literature review and the case study produce comprehensive elements for managing users in collaborative systems. All the elements and their relations are classified and represented as a set of mathematical equations. The model helps to manage users dynamically throughout the collaborative session which is rarely found in any collaborative work as compared to application-based role.