RESEARCH ETHICS APPLICATION FORM

Please Note That The Form Must Be Completed In Typed Script. Handwritten Applications Will Not Be Considered.

SECTION 1: PERSONAL DETAILS

1.	**APPLICANT DETAILS**	
1.1	Full Name and Surname:	Mike Andy Marin
1.2	Title (Ms/ Mr/ Mrs/ Dr/ Professor/etc.):	Mr.
1.3	Student Number (where applicable):	4909-704-0
	Staff Number (where applicable):	
1.4	School:	School of Computing
1.5	College:	College of Science, Engineering and Technology
1.6	Campus:	UNISA Science Campus
1.7	Existing Qualifications:	Master of Science Computer Science in Artificial Intelligence, and Master of Business Administration in Applied Computer Science
1.8	Proposed Qualification for Project:	98803 PhD in Computer Science
	(In the case of research of degree purposes)	
2.	**Contact Details**	
	Telephone Number:	+27 (0)78 527 8664
	Cell. Number:	+27 (0)78 527 8664
	e-Mail:	49097040@mylife.unisa.ac.za
	Postal address (in the case of students and external applicants)	
		P.O.Box 66460
		Highveld 0169
		Centurion, South Africa

3. SUPERVISOR/ PROJECT LEADER DETAILS

NAME	TELEPHONE NO.	EMAIL	SCHOOL / INSTITUTION	QUALIFICATIONS
3.1 Hugo Lotriet	+27 11 670 9238	lotrihh@unisa.ac.za	College of Science Engineering and Technology / UNISA	Professor
3.2 John A. Van Der Poll	+27 11 652 0316	vdpolja@unisa.ac.za	Graduate School of Business Leadership (SBL) / UNISA	Professor
3.3				

SECTION 2: PROJECT DESCRIPTION

Please do *not* provide your full research proposal here: what is required is a short project description of not more than two pages that gives, under the following headings, a brief overview spelling out the background to the study, the key questions to be addressed, the participants (or subjects) and research site, including a full description of the sample, and the research approach/ methods

2.1 Project title

Exploring complexity metrics and model comprehension for artifacts-based process models

2.2 Location of the study (where will the study be conducted)

The empirical part of the study will be conducted using an online survey with participants from around the world. The data analysis and theoretical part of the study will be conducted at the main researcher's house and UNISA library.

2.3 Objectives of and need for the study

(Set out the major objectives and the theoretical approach of the research, indicating briefly, why you believe the study is needed.)

This study will explore complexity metrics for business artifacts (BA) processes models, which is an emerging declarative way to describe business processes. Traditionally, the industry has used imperative business process management (BPM) technology to describe and model business processes. Today, BPM is a relative mature discipline with a large number of practitioners, and complexity metrics for traditional imperative BPM models are in common use today. However, the imperative description of BPM models based on directed graphs are not suitable for describing declarative BA process models. Process models based on BA are gaining acceptance in the area of case management, because their declarative approach is more flexible than are current imperative BPM models.

Complexity metrics developed for traditional imperative BPM may not be applicable to declarative BA process models. Current BA research has focus on its applicability to solve complex BPM situations and its formal verification, but not on complexity metrics. Therefore, there is a need to understand the applicability of BPM research regarding complexity metrics to BA process models and to create and empirically validate specific complexity metrics for BA process models. This study will fill that gap by exploring complexity metrics for BA processes models. In particular the study will focus on the newly created case management model and notation (CMMN) standard, which is based on BA. The findings of this study will have practical implications for the emerging CMMN standard and commercial products, because complexity metrics can be used to estimate quality, expected errors, and to select process models.

This quantitative study will focus on the empirically validation of complexity metrics for CMMN, and it will be experimental in design. The goal is to identify the best suitable set of complexity metrics for case management. The empirical validation will be conducted via an online survey. The subjects will be trained BPM business analysts, and the instruments will consist of an online CMMN tutorial and survey.

2.4 Questions to be answered in the research (Set out all the critical questions which you intend to answer by undertaking this research.)

The main questions this study will address are,

- Q_1. Are there applicable complexity metrics for BA process models as defined by the CMMN standard?
- Q_2. What is the relationship between the complexity metrics proposed by this study, and the perceived complexity of the process model by trained business analysts?
- Q_3. What is the relationship between the complexity metrics proposed by this study, and the model comprehension of the process models by trained business analysts?
- Q_4. What is the relationship between the perceived complexity of the process models, and the

model comprehension, among trained business analysts?
2.5 Conflict of Interest:
The applicant was involved in the creation of the CMMN standard and in the design and implementation of a case management commercial product. However, neither the CMMN standard nor the commercial product depends in any way on the outcome of the research. The applicant works for IBM and his work and relationship with IBM does not depend on the outcome of this research. At the moment, the applicant is not involved with neither the CMMN standard nor the commercial product. Therefore, there is no conflict of interest.

2.5 Research approach/ methods

(This section should explain how you will go about answering the critical questions which you have identified under 2.4 above. Set out the approach within which you will work, and indicate in step-by-step point form the methods you will use in this research in order to answer the critical questions).

For a study that involves surveys, please append a provisional copy of the questionnaire or interview questions and the consent form to be used. The questionnaire/interview protocol should show how informed consent is to be achieved as well as indicate to respondents that they may withdraw their participation at any time, should they so wish.

2.6 Proposed work plan

Set out your intended plan of work for the research, indicating important target dates necessary to meet your proposed deadline.

STEPS	DATES
1. A survey pilot with four to five subjects	June 1 to 7, 2016 (1 week)
2. Update survey with outcome of pilot	June 8 to 14, 2016 (1 week)
3. Identify mailing lists to post survey	June 1 to 14, 2016 (2 weeks)
4. Make survey available for subjects	June 15 to July 26 (6 weeks)
5. Data analysis	July 27 to September 20 (8 weeks)
6. Submit for publication	September 21 to October 18 (4 weeks)

Attached Documents:

File name	Description
MMarin Informed Consent form.pdf	Informed consent information in the questionnaire.
MMarin Survey-Complete.pdf	Online survey template. From this template 30 basic surveys are created. Each survey contains only two models, and one comparison between the models. Most questions display alternatives in random order. In addition, the "Notation Complexity" question of each survey contains only one third of the 34 symbols selected at random. Therefore, it is likely that each subject will receive a unique survey. This survey is being developed by the applicant, including all the graphics. The applicant owns all the IP of this instrument.
MMarin Survey-Example.pdf	An example of the more than 30 surveys that can be extracted from the main template. This survey is being developed by the applicant, including

	all the graphics. The applicant owns all the IP of this instrument.
MMarin Survey-Tutorial.pdf	The CMMN tutorial that is presented to the subject when completing the survey. This tutorial is being developed by the applicant, including all the graphics. The applicant owns all the IP of this instrument.

SECTION 3: ETHICAL ISSUES AND RISK ASSESSMENT

The UNISA Ethics Policy[1] applies to all members of staff, graduate and undergraduate students who are involved in research on or off the campuses of UNISA. In addition, any person not affiliated with UNISA who wishes to conduct research with UNISA students and/or staff is bound by the same ethics framework. Each member of the University community is responsible for implementing this Policy in relation to scholarly work with which she or he is associated and to avoid any activity which might be considered to be in violation of this Policy. All students and members of staff must familiarize themselves with AND sign an undertaking to comply with the University's "Code of Conduct for Research" (the policy can be accessed at the following URL: http://cm.unisa.ac.za/contents/departments/res_policies/docs/ResearchEthicsPolicy_apprvCounc_21Sept07.pdf).

The following risk assessment tool is designed to determine whether your research project may be classified as **Category 1** (research involving negligible risk), **Category 2** (research involving low risk), **Category 3** (research involving medium risk) or **Category 4** (research involving high risk).

Category 1: The probability of anticipated harm or inconvenience in the research is not greater than that experienced in daily life.
Category 2: Research in which the only foreseeable risk is one of potential inconvenience or discomfort to the participants.
Category 3: Research in which there is a potential risk of harm or discomfort, but where appropriate steps can be taken to mitigate or reduce overall risk.
Category 4: Research in which there is a real and foreseeable risk of harm and discomfort, which may lead to a serious adverse event if not managed in a responsible manner.

QUESTION 3.1

Does your study cover research involving:	**YES**	**NO**
a) Children or young people under the age of 18		**X**
b) Persons living with disabilities (physical, mental and/or sensory)		**X**
c) Persons that might find it difficult to make independent and informed decisions for socio, economic, cultural, political and/or medical reasons		**X**
d) Communities that might be considered vulnerable, thus finding it difficult to make independent and informed decisions for socio, economic, cultural, political and/or medical reasons		**X**
e) People who might be vulnerable for age related reasons e.g. the elderly		**X**
f) Unisa staff, students or alumni		**X**
g) Persons whose native language differs from the language used for the research		**X**
h) Women considered to be vulnerable (pregnancy, victimisation, etc.) i) Other. Please describe.		**X**

If you answer "Yes", to any of the questions below, your research may use more invasive research methodology or represent more complex ethical or privacy issues, in which case you need to explain (attach as an appendix) the ethical implications and procedures to minimise harm to the participants or Unisa (Category 3 - 4). If you are unsure about any of these concepts, please consult your supervisor/ project leader.

[1] The URL for this is: http://cm.unisa.ac.za/contents/departments/res_policies/docs/ResearchEthicsPolicy_apprvCounc_21Sept07.pdf

QUESTION 3.2

Will data collection involve any of the following:	**YES**	**NO**
Access to confidential information without prior consent of participants		X
Participants being required to commit an act which might diminish self-respect or cause them to experience shame, embarrassment, or regret		X
Participants being exposed to questions which may be experienced as stressful or upsetting, or to procedures which may have unpleasant or harmful side effects		X
The use of stimuli, tasks or procedures which may be experienced as stressful, noxious, or unpleasant		X
Any form of deception		X
Any use of materials harmful to human beings		X

If you answer "Yes", to any of the previously mentioned, explain (attach as an appendix) and justify. Explain, too, what steps you will take to minimise the potential stress/harm.

QUESTION 3.3

Will any of the following instruments be used for purposes of data collection:	**YES**	**NO**
Questionnaire	X	
Survey schedule		X
Interview schedule		X
Psychometric test		X
Other/ equivalent assessment instrument		X

If you answer "Yes":

- Attach copy of research instrument where applicable.
- If data collection involves the use of a psychometric test or equivalent assessment instrument, you are required to provide evidence (attach as an appendix) that the measure is likely to provide a valid, reliable, and unbiased estimate of the construct being measured as an attachment.
- If data collection involves interviews and/or focus groups, please provide a list of the topics to be covered/ kinds of questions to be asked as an attachment. Explain the withdrawal or discontinuation criteria of respondents.

QUESTION 3.4

Will the autonomy of participants be protected through the use of an informed consent form, which specifies (in language that respondents will understand):	**YES**	**NO**
The nature and purpose/s of the research	X	
The identity and institutional association of the researcher and supervisor/project leader and their contact details	X	
The fact that participation is voluntary That responses will be treated in a confidential manner	X X	

Any limits on confidentiality which may apply	X	
That anonymity will be ensured where appropriate (e.g. coded/ disguised names of participants/ respondents/ institutions)	X	
The fact that participants are free to withdraw from the research at any time without any negative or undesirable consequences to themselves	X	
The nature and limits of any benefits participants may receive as a result of their participation in the research	X	
Is a copy of the informed consent form attached?	X	

If not, this needs to be explained and justified (attach as an appendix), also the measures to be adopted to ensure that the respondents fully understand the nature of the research and the consent that they are giving.

QUESTION 3.5

Specify what efforts been made or will be made to obtain informed permission for the research from appropriate authorities and gate-keepers (including caretakers or legal guardians in the case of minor children)?

Subject participation will be requested using public domain mailing lists on the topic of business process, BPM, Workflow, and case management. In particular, LinkedIn lists for CMMN (156 members), BPMN (6,665 members), and BPM (13,535 members) will be used. Each list has an owner (or administrator), but all members are encouraged to post questions or discussions relevant to the topic of the list. Research in processes is a relevant topic in the targeted lists. However, as a gesture of courtesy, the owners (or administrators) of those lists will be contacted in advance, and they will be provided with a copy of the survey. For example, for BPTrends Paul Harmon and Cecilia Wolf (founders of BPTrend) will be contacted, for WfMC Nathaniel Palmer (WfMC manager) will be contacted, and for BPMInstitute Gregg Rock (Founder and President of BPMInstitute) will be contacted.

The following table list some of the forums that may be targeted for the research:

Forum	**URL**
CMMN Group at LinkedIn	www.linkedin.com/groups/6788113
BPMN Group at LinkedIn	www.linkedin.com/groups/111271
BPM Group at LinkedIn	www.linkedin.com/groups/73876
BPM Institute	www.bpminstitute.org
BPTrends	www.bptrends.com
Camunda forum	camunda.org/forum
BPM.com	bpm.com
Workflow Management Coalition	www.wfmc.org

QUESTION 3.6

Guided by the information above, classify your research project based on the anticipated degree of risk. *[The researcher completes this section. The Research Ethics Review Committee critically evaluates this benefit-risk analysis to protect participants and other entities.]*
Place an '✓ in the tick box

Category 1 Negligible		Category 2 Low risk		Category 3 Medium risk		Category 4 High risk	
	X						

(a) Briefly justify your choice/classification:

The subjects (trained business analysts) are used to interact with computer applications and online forums. Participation on the survey will be voluntary, the subject can abandon the survey at any time, and the topic of the survey is in the area of interest. Therefore, participation in this survey is not different of the subjects experience during their daily routine.

(b) In medium and high risk research, indicate the potential benefits of the study for the research participants and/or other entities.

(c) In medium and high risk research, indicate how the potential risks of harm will be mitigated by explaining the steps that will be taken (e.g. referral for counselling, debriefing, etc.)

QUESTION 3.7

STORAGE AND DISPOSAL OF RESEARCH DATA/SAMPLES:
Please note that the research data should be kept for a period of at least five years in a secure environmental safe location by arrangement with your supervisor. In the case of samples will the samples be destroyed

How will the research data be disposed of? Please provide specific information, e.g. shredding of documents incineration of videos, cassettes, etc.

The collated research data will be published (without any identifiers to indicate the identity of the responders) to allow other researches to replicate the research, or to use the data as secondary sources. The data will be published as a comma separated file. In addition, the survey source code and other code developed to analyse the data will be published and put in the public domain.
A copy of the all the material developed for this study, including the research data, will be stored in more than one DVD, and the DVDs will be stored in geographical disperse locations.

QUESTION 3.8

In the subsequent dissemination of your research findings – in the form of the finished thesis, oral presentations, publication etc. – how will anonymity/ confidentiality be protected?

The research data will not contain subject personal or confidential information. Research data will consist of responses to the survey in a tabular format. Each row of the tabular data corresponds to an observation (a survey answered by a subject), and each column will correspond to a particular question. There will be no way to associate a row with a particular subject, because no personal information (with exception of gender and age) will be collected. In addition, the IP address of the machine used by the subject will not be collected and cookies will not be used. Therefore, there is no way to identify or disclose the identity of the subjects.

Participants will have the option of providing an email address if they want to get further information. Four emails will be sent to that email address:

1. One email notifying the participant that we got their email address.
2. One email when the survey closes describing the charity distribution.

3. One email few weeks later with preliminary results from the survey.
4. Finally few months later, one email when final results are published.

To avoid collecting email addresses with the survey data, participants that wish to receive the four emails, are instructed as follows:

> "To participate, you will need to email us indicating the wiliness to participate. We will collect the email address and will use it to send you four emails: ... The emails in the email list will be maintained confidential, and will not be given to any third party. After the last email is sent, we will destroy the email list.
> We suggest that you don't use your personal or business email address, but instead use a forwarding email address to conceal your identity (for example http://www.33mail.com), or create another email address. That way, we don't get any identifiable information about you. Send us an email CMMNsurvey@mmm.33mail.com from the email address you want us to use."

An email address will be created and used to receive the participants email addresses and to send the four emails (CMMNsurvey@mmm.33mail). The received email addresses will be stored in a text file and will be used to send four emails. With exception of the first email all other emails will be sent to all the email addresses in the "Bcc" (blind carbon copy) field.
After the four emails are sent, the text file with the email addresses will be destroyed, and the email address CMMNsurvey@mmm.33mail will be deactivated destroying the history.
Note that there is no way to link the email addresses to the survey data, because the email are send by participants wishing to receive the email information to an email address after they complete the survey.

QUESTION 3.9

Is this research supported by funding that is likely to inform or impact in any way on the design, outcome and dissemination of the research?	**YES**	**NO** **X**
If yes, this needs to be explained and justified.		

QUESTION 3.10

Has any organisation/company participating in the research or funding the project, imposed any conditions to the research? NO
If yes, please indicate what the conditions are.
The charity donations will be founded by the applicant, that has set aside enough founds ($1002) for this purpose. The power analysis indicates that 135 participants are required for the survey; therefore, the survey will be closed a day after that target number of subjects is reached. The 1002 dollars corresponds to 167 donations to allow for a margin of participants (extra 32 participants). The funds will be administered by the applicant with supervision by his supervisor. The study does not depend on the charily donations, but they are being offered to the subjects for motivational purposes. It is well established that incentives increase survey participation, and in this particular case where the subjects are busy professionals and the required number of subjects is high (135 subjects are required), we considered necessary to provide an incentive to reach the required number of participants.

SECTION 4: FORMALISATION OF THE APPLICATION

APPLICANT

I ___Mike A. Marin____ have familiarised myself with the UNISA Ethics policy, the form completed and undertake to comply with it. The information supplied above is correct to the best of my knowledge. I have read the policy for research ethics of UNISA and the contents of my application as presented to the CREC of CSET is a true and accurate reflection of the methodological and ethical implications of my proposed study. I shall carry out the study in strict accordance with the approved proposal and the ethics policy of Unisa. I shall maintain the confidentiality of all data collected from or about research participants, and maintain security procedures for the protection of privacy. I shall record the way in which the ethical guidelines as suggested in the proposal has been implemented in my research. I shall notify URERC in writing immediately if any change to the study is proposed or if any adverse event occurs or when injury or harm is experienced by the participants attributable to their participation in the study.

NB: PLEASE ENSURE THAT THE ATTACHED CHECK SHEET IS COMPLETED

SIGNATURE OF APPLICANT ……. **DATE** May 23, 2016 ……..

SUPERVISOR/DIRECTOR OF SCHOOL

NB: PLEASE ENSURE THAT THE APPLICANT HAS COMPLETED THE ATTACHED CHECK SHEET AND THAT THE FORM IS FORWARDED TO YOUR COLLEGE RESEARCH COMMITTEE FOR FURTHER ATTENTION

DATE: …….

SIGNATURE OF SUPERVISOR/ PROJECT LEADER :_____

RECOMMENDATION OF COLLEGE RESEARCH AND ETHICS COMMITTEE

The application is (please tick):

	Approved
	Recommended and noted
	Not Approved, referred back for revision and resubmission

NAME OF CHAIRPERSON: _____**SIGNATURE:**_____

DATE ……

RECOMMENDATION OF SENATE RESEARCH AND ETHICS COMMITTEE

NAME OF CHAIRPERSON:_____SIGNATURE_____ **DATE...……**

UNISA

CSET - CREC

ETHICAL CLEARANCE APPLICATIOM FORM

CHECK SHEET FOR APPLICATION

PLEASE TICK (✓)

1. Form has been fully completed and all questions have been answered	
2. Questionnaire/interview protocol attached (where applicable)	
3. Informed consent document attached (where applicable)	
4. List of acronyms and abbreviations should be attached.	
5. Approval from relevant authorities obtained (and attached) where research involves the utilization of space, data and/or facilities at other institutions/organisations	
6. Signature of Supervisor / project leader	
7. Application forwarded to College Research Committee for recommendation	
8. A complete copy of the proposal should be available if so requested.	