UNIVERSITÉ DE LORRAINE

École doctorale IAEM Lorraine

Formal Verification of Distributed Algorithms using Distributed-PlusCal

Report

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A thesis submitted to obtain a

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(mention informatique)

by

Heba Al-kayed

Composition du jury

Président :	Le président
Rapporteurs :	Le rapporteur 1 Le rapporteur 2 Le rapporteur 3
Examinateurs :	L'examinateur 1 L'examinateur 2

Laboratoire Lorrain de Recherche en Informatique et ses Applications — UMR 7503

Mis en page avec la classe thesul.

Remerciements

Les remerciements.

Je dédie cette thèse
à ma machine.
Oui, à Pandore,
qui fut la première de toutes.

Summary

1

Introduction

This is a very nice thesis about TLA [?].

Motivations why this extension

Outline

2

Background info

a brief overview of TLA and Pluscal possibly with an example to show why it's used or its advantages. maybe mention real life applications like amazon's AWS.

2.1 TLA+

[?].

2.2 PlusCal algorithm language

3

Related work

position of our work compared with other work

3.1 PGO

3.1.1 Modular PlusCal

4

Distributed PlusCal

4.1 Components

4.1.1 Nodes

an example to show the nodes/threads.

4.1.2 Channels

Unordered channels example with it's translation

FIFO channels example with it's translation

Supported channel functions expected syntax and limitations

4.2 Examples

our examples with their translations

5

Code Documentation

5.1 general structure of the toolbox and it's components

try to describe the general flow

5.2 parsing and expansion process

5.3 some software-based diagram

or maybe an AST description graph

6

Conclusion and future work