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## 0 Introduction

### 0.0 Guidance

### 0.1 The network

Alapedes is the acronym for ALgebraic Approach to Performance Evaluation of Discrete Event Systems. The theory of discrete event systems deals with dynamical systems that are *event-driven* as opposed to *time-driven*; usually their state variables take on only discrete values. Several approaches exist to study discrete event systems; of these the "logical" approach, where the *ordering* of the events is of interest, and the "timed" approach, where the *timing* of the events is also of interest for the mainstreams form the research within Alapedes

0.3 Legend

0.3.1 Partners

The Al apedes

**Cross-Fertilisation on The Theoretical Level**

- T-1 Representation problems
- T-2 Stability problems
- T-3 Optimisation problems
- T-4 Control of automata
- T-5 Large systems problems

**Applications**

- A-1 Transportation systems
- A-2 Manufacturing systems
- A-3 Communication networks

**Software**



Due to changes in the project status, the research on T-1 has been discontinued at KUL.







to heavy for the initial design. The evaluation of the interest of (max;

## 1 PROGRESS

## 1.2 Scientific highlights

### 1.1.11 Milestones

## 1 PROGRESS

### 1.3 *Networking and coordination*

#### Formal contacts

**Reading group** A reading and working group involving people from LIAFA, INRIA and ENS was created. The study concentrated on two books: *Probability measures on semigroups*

of the network) and Cordis

letter series. One can very easily prove that all classical decidability problems are decidable





## 1 PROGRESS

### 1.6 Difficulties encountered

and was approved by the European Commission by letter of January 6, 1999. It was stated



The research effort (in manmonths) spent to Alapedes by the different partners is estimated below; it is sorted out according to the source of payment (from Alapedes funds or not)

<i>name</i>	<i>nationality</i>	<i>birth</i>	<i>appointment</i>	<i>partner</i>	<i>specialities</i>
Remco de Vries	NL	640328	961101 { 980831	KUL	M-53, M-41
Stephane Perennes	F	681206	961115 { 970930	TUD	M-99
Matthias Kanta	D	571004	961115 { 971115	LIAFA	M-43, M-42
Eleni Katirtzoglou	GR	651016	961125 { 981125	HP	M-99
Eleni Katirtzoglou	GR	651016	990222 { 000822	TUD	M-99
Michael M <sup>c</sup>					



### 3 Joint work

#### 3.1 Joint publications

Joint papers | de ned as publications in which authors from at least two AI apedes partners have contributed | are [14, 29, 61, 57, 54, 116, 114, 118, 121, 130, 202]. Publications



## A RESEARCH EFFORT



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*E MID-TERM REVIEW*

**E Mid-term review**

**Programme of mid-term review session**

**Tuesday 30 March, 1999**