Master of Computer Science
University of Bordeaux

Formal Design
Prover ACSL Frama-C

(TEAM REPORT)

Instructor: Professor Hugo GIMBERT

Team members:

- **Nguyen Vu Anh Trung**
- **Nguyen Quoc Khanh**
- **Mr Nguyen Chi Cong**

November 10, 2021

1. About Framma-c

Frama-C at a glance

Software Analyzers

- A **Fra**mework for **M**odular **A**nalysis of **C** code
- Developed at CEA LIST
- Released under LGPL license
- Kernel based on CIL [Necula et al. (Berkeley), CC 2002]
- ACSL annotation language
- Extensible plugin oriented platform
    - Collaboration of analyses over same code
    - Inter plugin communication through ACSL formulas
    - Adding specialized plugins is easy
- http://frama-c.com/ [Kirchner et al. FAC 2015]

2. Project programs:

1/Computing the sum of values of an array of int.

==> final-program/sum2.c

2/Computing the average value of an array of int.

==> final-program/array_average.c

3/Computing the median value of an array of int.

==> final-program/array_median.c

4/Counting exactly the number of words in a text

==>final-program/words_counter.c

5/Counting the number of occurences of a word in a text

==>final-program/word_occurence_counter.c

6/Compare 2 differents strings "hello" vs "bonjour"

==>final-program/strings_compare.c

Command to execute the Frama C prover

```
frama-c -wp -wp-rte  final-program/"program.c"
```