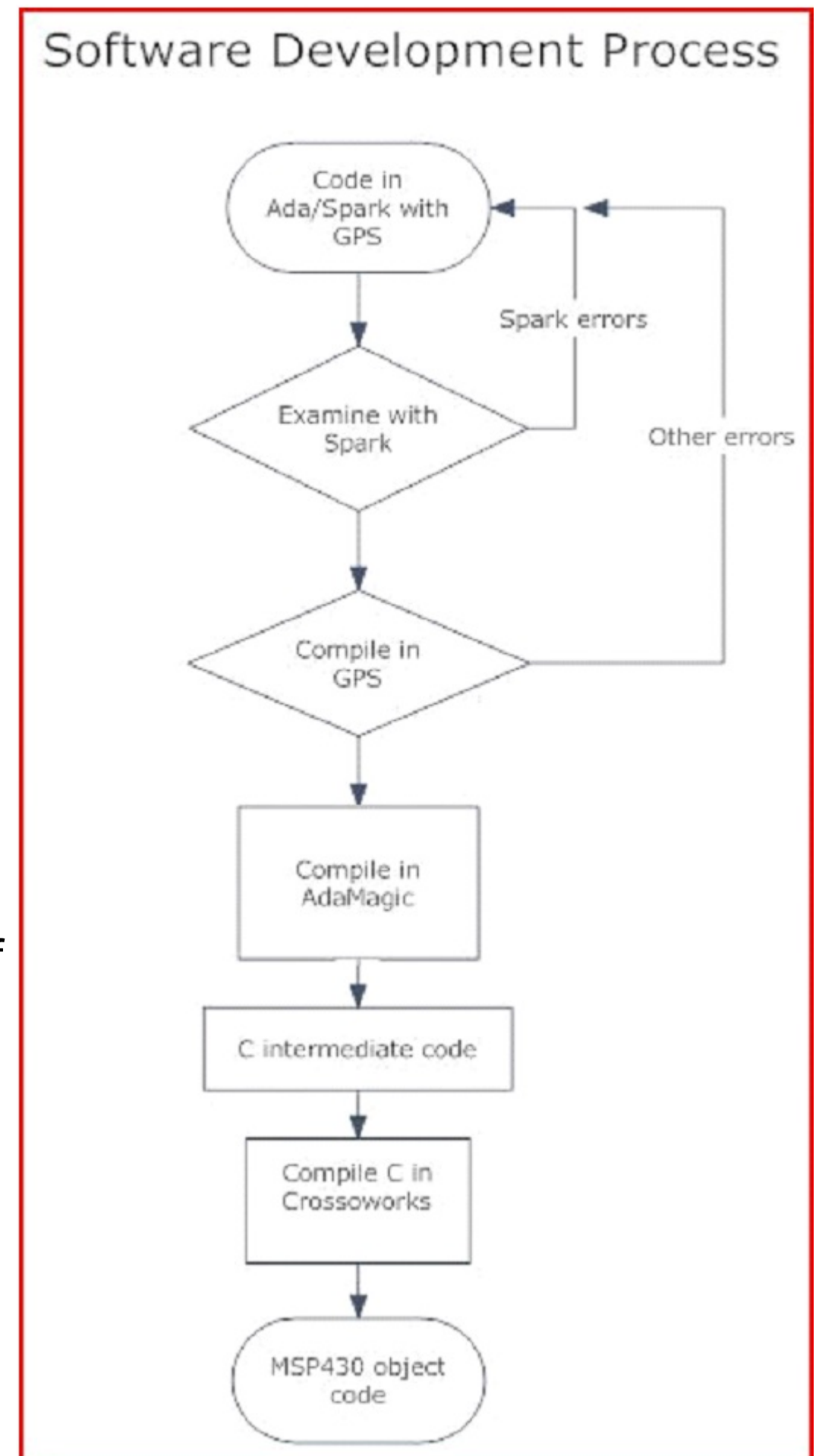


Software Development Process

- Software is written in SPARK/Ada using Adacore's GNAT Programming Studio (GPS)
- Checked with the Praxis High Integrity Systems' SPARK Toolset from within GPS
- Compiled and checked with Adacore's GNAT Pro Ada compiler
- Sofcheck's AdaMagic compiler front end is used to produce ANSI C as the intermediate code
- Rowley's Crossworks C cross compiler for Texas Instruments' MSP430 CPU produces the object code
- Pumpkin's Salvo RTOS is used as the operating system

Vermont Tech activities

- One Software Engineering Bachelors student, under the supervision of another faculty member, has written most of the Arctic Sea Ice Buoy last year
- After complete testing of the Arctic Sea Ice Buoy, a large grant will be submitted for the production of 10-20 of them. They will be used for validating a Prof. Jun Yu's (UVM) mathematical model of the ocean/ice interface
- This year we have several Software Engineering students working on the CubeSat software
- Three Electro-Mechanical Engineering Technology Bachelors students are completing a 3m azimuth/altitude steerable dish for 1.2 GHz and 2.4 GHz communication with the CubeSats. This will be part of our GENSO ground station.
- We have an Icom IC-910H, heavy duty rotors and 2m/440 MHz yagi antennas for the GENSO station.



One more Ada fact:

- If you fly, your flight was controlled by the Enroute Air Traffic Control System, written in Ada and delivered six months early and under budget. If you flew on a Boeing or Airbus plane, so was your avionics software.

Acknowledgments

Several companies have donated very expensive software through their academic programs, which was critical to our project:

- [AdaCore \(adacore.com\)](http://adacore.com) donated their GNAT Pro Ada compiler and programming environment.
- Praxis High Integrity Systems (praxis-his.com) donated their SPARK Toolset
- [SofCheck \(sofcheck.com\)](http://sofcheck.com) donated their AdaMagic Ada to C compiler front end
- Applied Graphics (stk.com) donated their Satellite Toolkit analysis software

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- [NASA Vermont Space Grant Consortium and NASA directly](#)

• NASA Vermont Space Grant Consortium

• NASA

• Vermont Technical College

• AdaCore, Inc.

• Praxis High Integrity Systems

• SofCheck

• Applied Graphics, Inc.

