1.1. DEVELOP HIGHER C CODE FUNCTIONS

Given a very high level “requirements specification” the trainees shall be able to develop the following C code functions that are supposed to use the previously developed simple mathematical functions (week 1).

1.1.1. Generic mathematical operation

DoMath-00: The function shall have the following prototype:

UINT32 do_math (OPERATION oper, UINT32 input_1, UINT32 input_2, UINT8 * valid)

DoMath-01: The function shall be able to apply the following mathematical operations to it second and third inputs based on first input parameter value:

- Sum (Ref. 1.2.1 of HIS-Academy-training-plan(Neurodiversity).pdf) – oper = SUM = 1
- Subtraction (Ref. 1.2.2 of HIS-Academy-training-plan(Neurodiversity).pdf) – oper = SUB = 2
- Multiplication (Ref. 1.2.3 of HIS-Academy-training-plan(Neurodiversity).pdf)– oper = MUL = 3
- Division (Ref. 1.2.4 of HIS-Academy-training-plan(Neurodiversity).pdf)– oper = DIV = 4

DoMath-02: The function shall return the result of the requested mathematical operation.

DoMath-03: The function shall set the value referenced by it forth parameter to 1 in case the performed mathematical operation validation have been successful, otherwise shall set it to 0.

1.1.2. Pythagorean theorem (partial)

Pythagorean-00: The function shall have the following prototype:

INT32 pitagoras (UINT16 cateto_1, UINT16 cateto_2)

Pythagorean-01: The function shall return the square of the hypotenuse of a triangle given it other two sides lengths.

Pythagorean-02: The function shall return error (-1) when one of the following occurs:

- Any side length received is greater or equal to 255
- Calculated hypotenuse is equal to zero (what means there is no triangle).
- Any invoked mathematical operation returns invalid operation.