



Attachment no 1
for the inquiry no 15/PIAST/2022
Technical parameters

Order subject: Software delivery: Node-Locked Matlab with toolkits (4 standalone licenses) or equivalent

CPV code and name: 48460000 - Analytical, scientific, mathematical or predictive software packages

Brief description of the device: Software: Node-Locked Matlab with toolkits or equivalent (4 standalone licenses).

- I. Minimal technical requirements of the software:
 1. Core software capabilities (4 standalone licenses)
 - a. Possibility to create scripts, functions and classes in matlab language or compatible
 - b. Interactive data cleaning, preparation, and code generation
 - c. Interactive and highly customizable data visualizations
 - d. Prebuilt functions for statistical analysis, signal processing
 - e. Report generation
 - f. Available software documentation
 2. Simulation software environment for Model-Based Design (4 standalone licenses)
 - a. Software based on block diagram environment
 - b. Possibility to create virtual model to simulate and test system
 - c. Design validation using physical models and Hardware-in-the-Loop testing
 3. Simulation package toolboxes (1 license)
 - a. Available Coder package for C and C++ code generation from Simulation model
 - b. Available models of components, analysis tools, and test benches for designing and verifying mixed-signal integrated circuits (PLLs, data converters and other)
 4. Communications and DSP toolboxes (1 license)
 - a. Capability to perform analysis, design, end-to-end simulation, and verification of communications systems (channel coding, modulation, OFDM)
 - b. Possibility to generate waveforms, display constellation and eye diagrams, bit-error-rate
 - c. Capability to model real-time DSP systems for communications
 - d. Possibility to design and analyze FIR, IIR, multirate, multistage, and adaptive filters
 - e. Time Scope, Spectrum Analyzer, and Logic Analyzer functions
 - f. Support for bit-accurate fixed-point modeling and HDL code generation



5. Code generation toolboxes (1 license)
 - a. Capability to generate portable, synthesizable VHDL code with support for Xilinx, Microsemi and Intel FPGAs
 - b. Verifier capability to test and verify VHDL designs for FPGAs including Universal Verification Methodology (UVM) test benches and hardware-in-the-loop
 - c. Capability to generate C and C++ code from matlab language code
 - d. Capability to generate C and C++ code from simulation model
 - e. Capability to generate readable, compact, and fast C and C++ code for embedded processors from matlab language code as well as from simulation model
 - f. Support for MISRA C software standard
 - g. Support for data types and tools for optimizing code efficiency and implementing fixed-point and floating-point algorithms on embedded hardware

6. Signal Processing Toolbox (1 license)
 - a. Provides functions to manage, analyze, preprocess, and extract features from uniformly and nonuniformly sampled signals
 - b. Provides tools for filter design and analysis, resampling, smoothing, detrending, and power spectrum estimation
 - c. Visualization and processing signals simultaneously in time, frequency, and time-frequency domains

7. Technical support
 - a. Provides the installation of software and problems in the current work with the software and is carried out by phone and e-mail.
Technical support in Polish or English