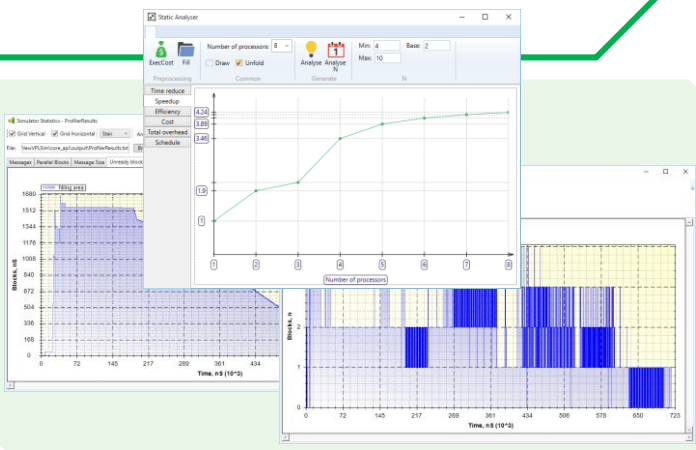


Additional tools

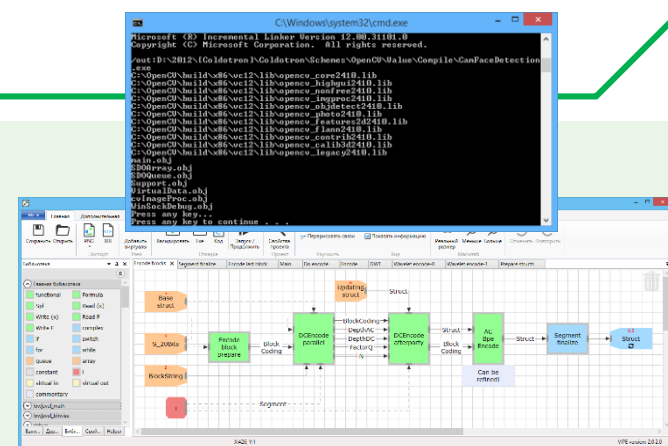
Performance estimation

Analysis of computing characteristics for developed visual programs. Tools provide rapid and effective methods for program characteristics estimation and evaluation through all stages of the program development process. Analysis methods allow to correct the development process according to given constraints and requirements. It also allows optimizing algorithm structures.

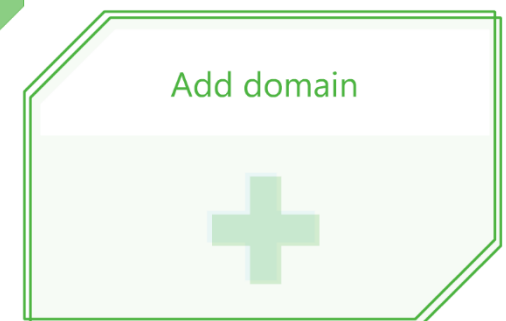
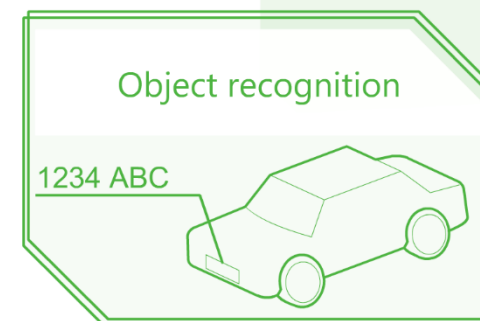
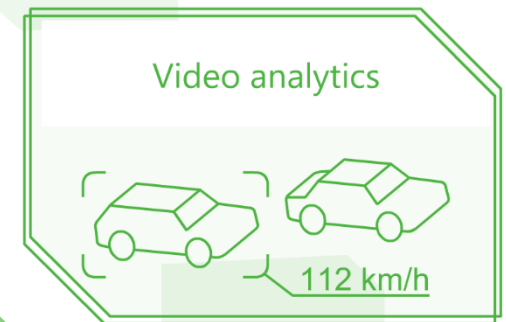


Code generation

Preparation and Integration of developed programs with target embedded heterogeneous manycore platforms. Code generation tools perform an allocation on different types of cores, provide integration methods, communication and synchronization and generate final code for correct execution in multitasking heterogeneous environment.



Developers edition



VIPE

Developer

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Technologies department



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- Accomplished within the Federal Special Programme of Russian Federation, project "Technology and development tools of the portable embedded software for heterogeneous manycore embedded systems"
- Accomplished within the European technology platform ARTEMIS, project "PaPP"

Visual integrated environment for programming solutions

The VIPE environment provides full development cycle for domain specific programs from an algorithm to a final code, that is ready to upload into a target hardware platform. The high-level visual representation and domain specific libraries significantly accelerate the program design process.

Check out
VIPE features
on Youtube
(5 minutes):



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VIPE – visual environment for program design, allowing to develop rapid solutions for a variety of applications

Developer (domain expert) designs the program scheme ① using domain specific library elements. ② The visual program language and libraries are extendable and equipped with tools for adding new functions. If there is no required element in library, a developer describes it by giving the function description and its inputs and outputs.

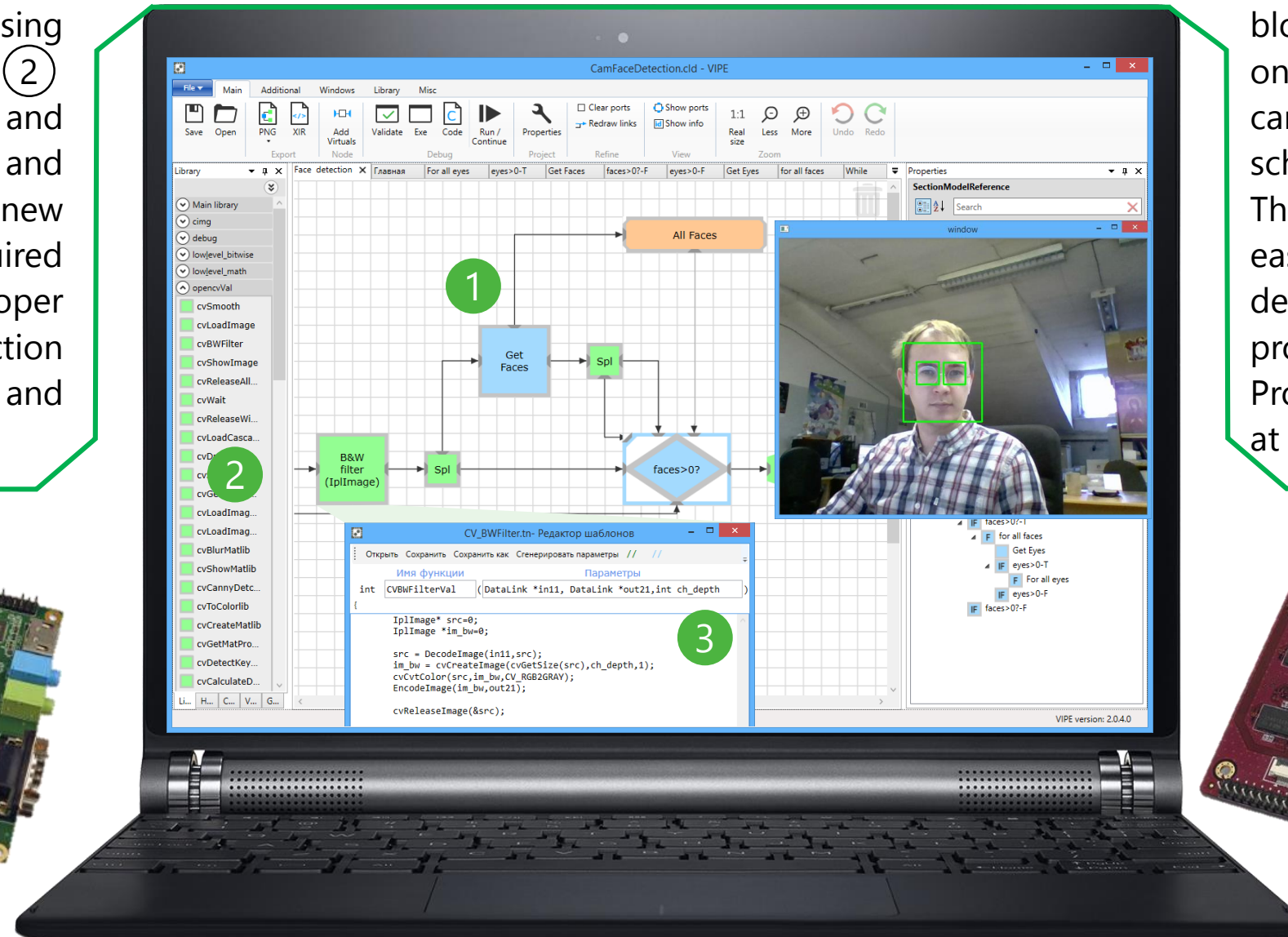
Separate development and programming

Programmer works with each scheme block separately. ③ He implements only data processing functionality and cannot influence on the program scheme behavior. Thereby program code errors can be easily localized and its probability is decreased without reducing the whole program readability. Program is flexible and easy to change at any stage of a development.

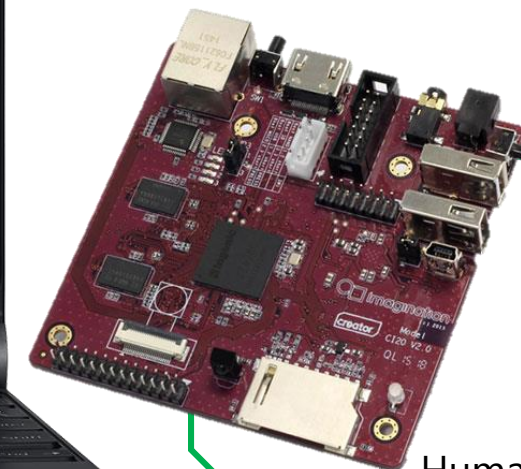
Task 1



Optical road sign recognition



Task 2



Human face recognition

Environment allows domain specialist to design various program prototypes rapidly without (or with a minimal involvement of) a programmer / coder.

With additional tools (see the back cover) the development environment allows to:

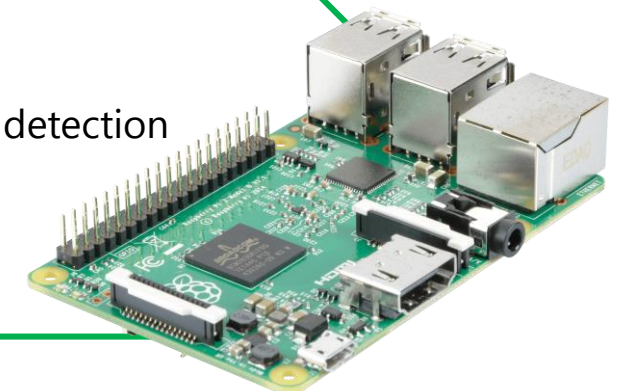
- make early demonstration of solution prototypes to potential customers
- reduce the time to market for a complex hardware/software solutions
- apply the developed solution to various target hardware platforms

Technology basis

VIPE uses the VPL language based on the formal parallel computation model AGP (Asynchronous Growing Process). AGP model is a result of fundamental researches in parallel computing, evolved during 20 years. It can carry the solution of complex problems that are concerned with parallel computations and heterogeneity of the target platform, allows user to focus exactly on solving application tasks.

Task N

Motion detection



Check out VIPE features
on Youtube in 5 minutes:

