«The prospects of microcontroller application in the agriculture digitalization»

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Problem statement

- Persistent conviction of agricultural enterprises heads in the high cost of implementing IT - technologies.
- The lack of qualified personnel for the development of specialized IT - systems based on microcontrollers.
Solution methods

The use of modern achievements of microprocessor technology, and in particular the Arduino platform:

- Low cost
- A wide range of modules produced
- Easy pairing of these modules
- Arduino IDE, a freeware programming environment
- Extensive collection of specialized function libraries
Examples of Arduino platform microcontroller modules

a) Arduino UNO
b) Arduino NANO
c) Arduino MEGA
d) Arduino ZERO
e) Arduino DUE
f) Arduino M0 PRO
Solution methods

Communication modules:

- a) Ethernet module
- b) WiFi module
- c) GSM module

Sensors:

- a)
- b)
- c)
- d)
- e)
- f)
Solution methods

Lack of qualified personnel

- Expansion of IT training - specialists in agricultural universities
- Expansion of IT staff - teachers in the field of agricultural activities
- The introduction of curricula training specialists in disciplines related to the use of microprocessor technology in agriculture
- Carrying out production practices at real agricultural enterprises for installation, configuration and maintenance of devices on the Arduino platform for the automation of individual technological processes
Conclusions

• The Arduino platform allows you to develop low-cost devices and systems of different scale and spectrum of activity and is a promising direction of the agriculture digitization

• Expansion of qualified specialists training in the field of microprocessor technology application in agriculture is required.

• Positive prospects after the introduction of the Arduino platform in the AIC:
  ✓ Attracting young graduates to work positions in rural areas due to the elimination of heavy routine work.
  ✓ Increase the prestige of the profession.
  ✓ Increase productivity of agricultural enterprises.
  ✓ Getting up to date information on agricultural processes.
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