

IoT:

remote update service

Introduce: service for remote firmware update of controllers in the IoT project

Components:

1. Mobile application
2. Controller firmware
3. Service software

Features of the service:

1. Languages: Java, C/C++
2. Platforms: Android, Java EE
3. Business server: Java EE server
4. Embedded libraries: TLS/SSL library, WiFi library, IoT communication library, standard libraries from the manufacturer of microcontrollers

Features of firmware of controllers:

1. Optimized for the amount of ROM and RAM memory used (microcontroller has limited resources - this is a requirement of the business customer)
2. Adapted to the used interface (Ethernet, WiFi or GSM)
3. RAM memory is a time-shared resource (for different tasks and subtasks)
4. If communications are interrupted during the update process, the old version of the firmware is retained
5. The text representation of the data for updating is used - this is a requirement of the business customer

Service flowchart:

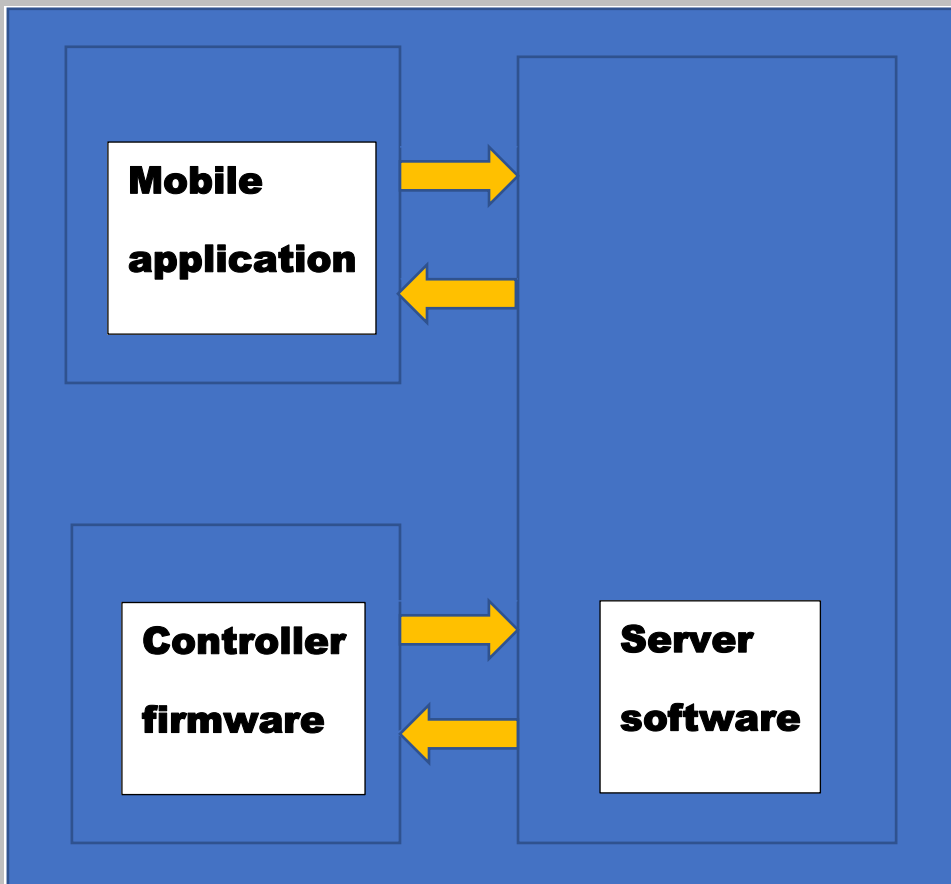


Figure 1. Update request

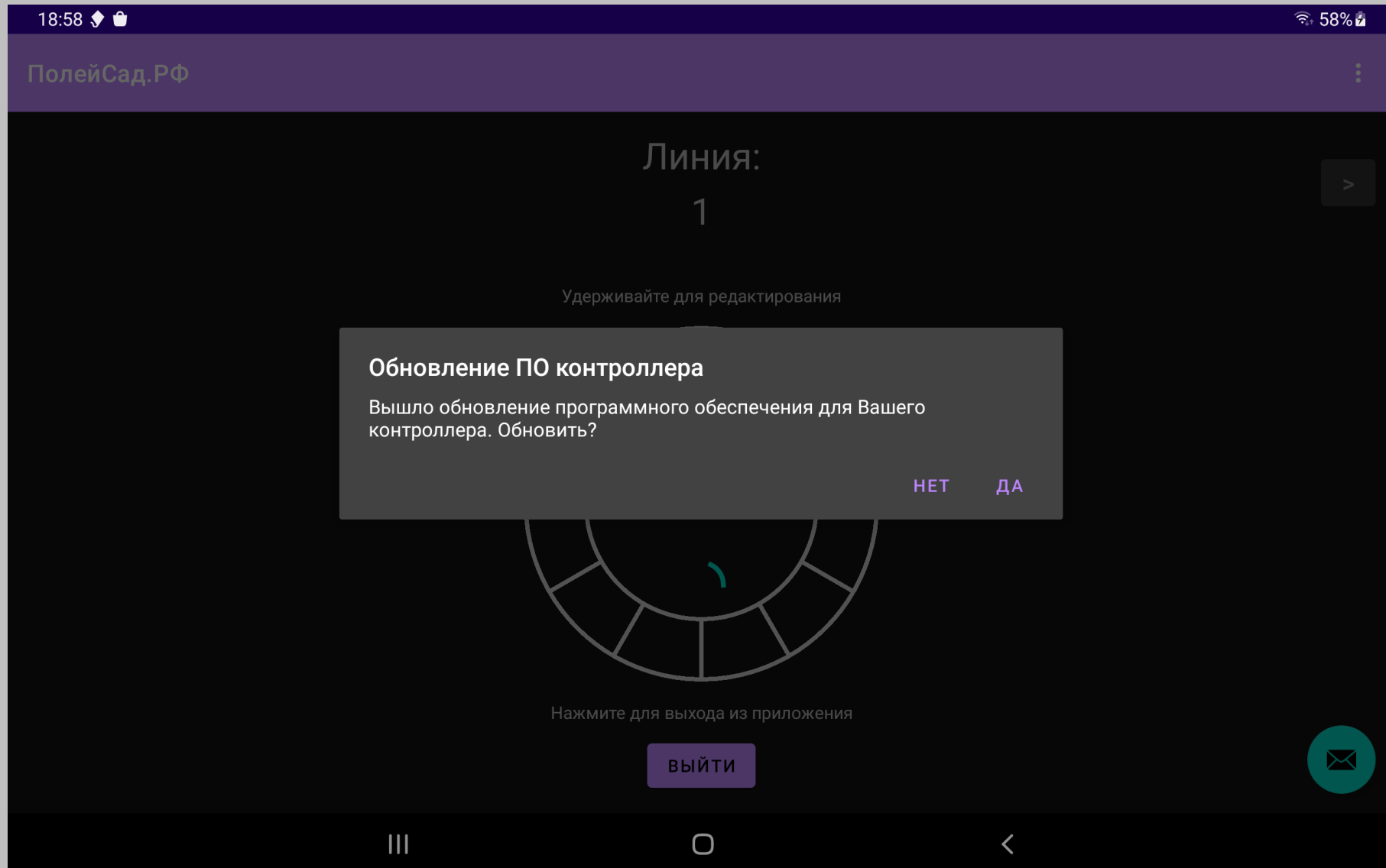


Figure 2. Update progress

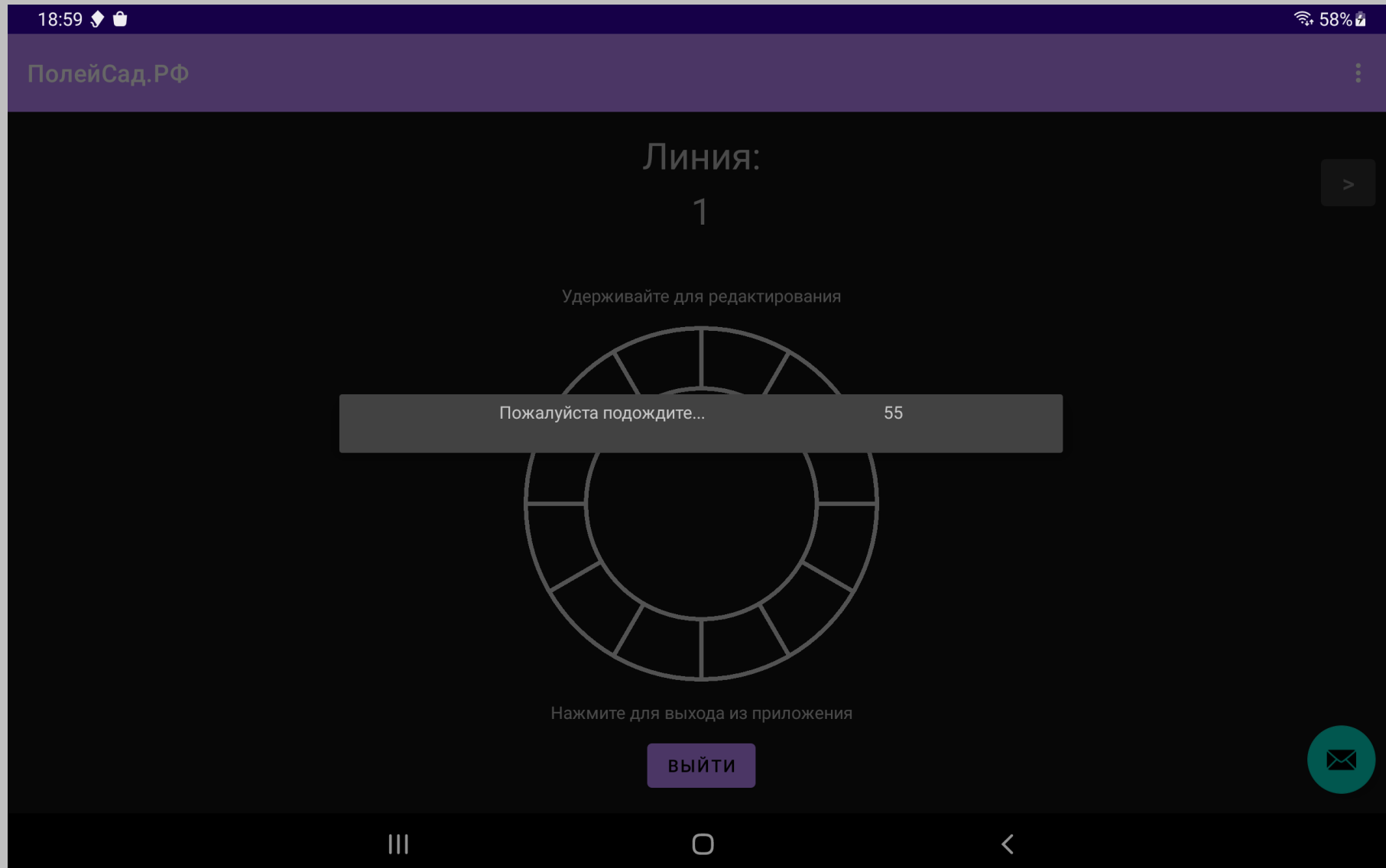


Figure 3. Update completed successfully

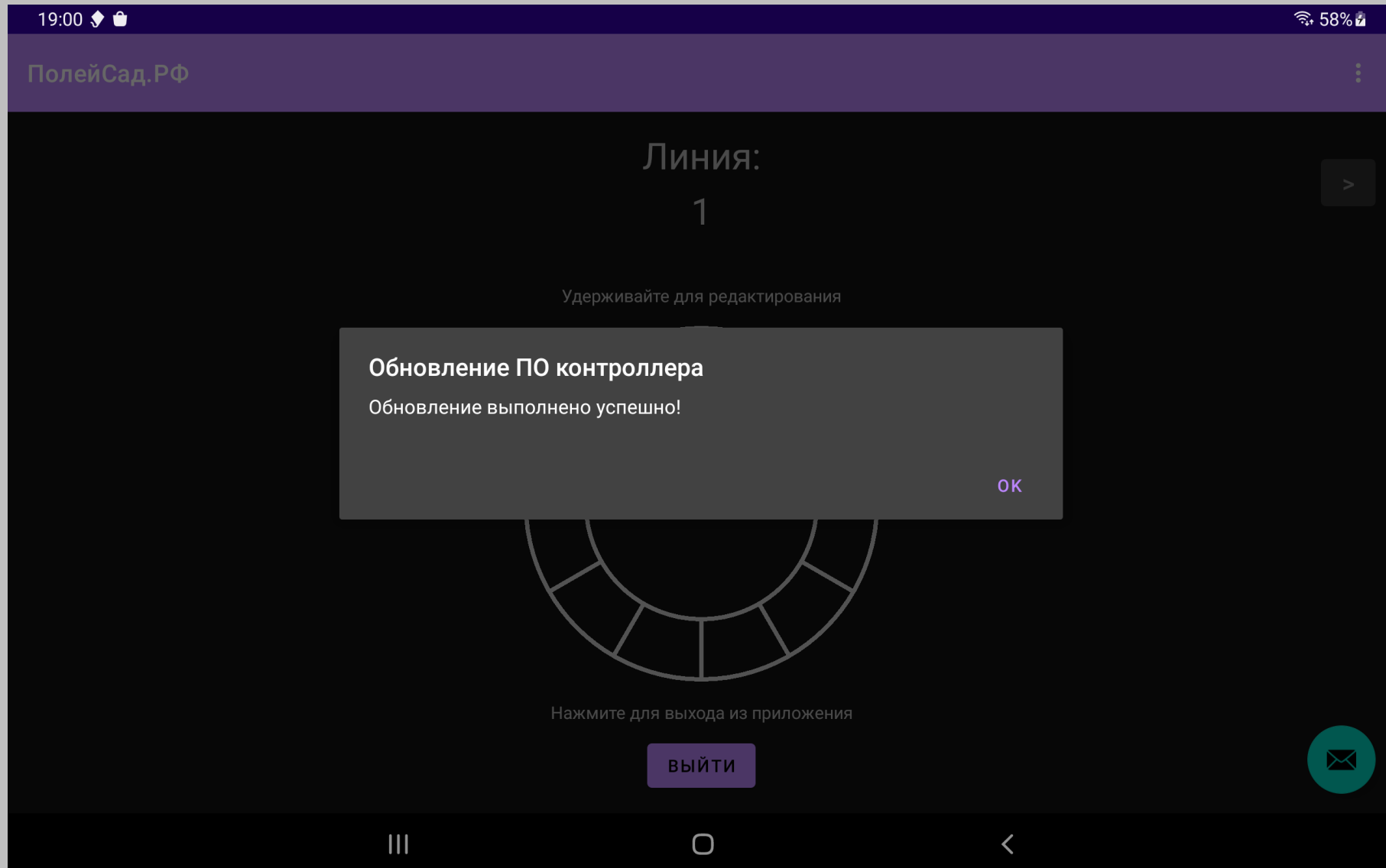


Figure 4. A communication error has occurred

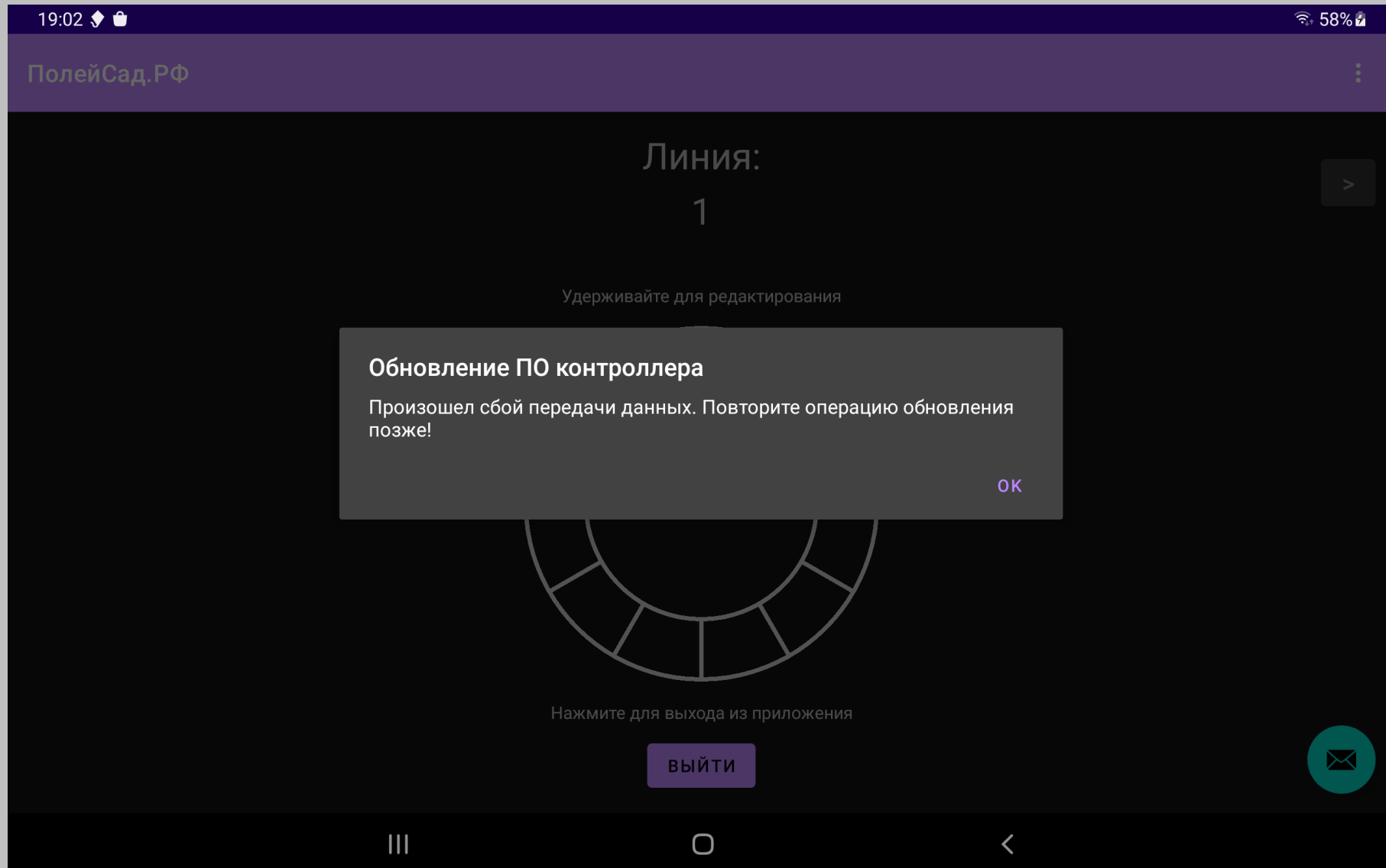


Figure 5. The text representation of the data for updating

[illegible]

Thanks for attention!