

WeightLogger

RFID control

This document depicts the design for the system, including all parts composing it, electronics and software.

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ELCAN SOFTWARE



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1 Document Version Control

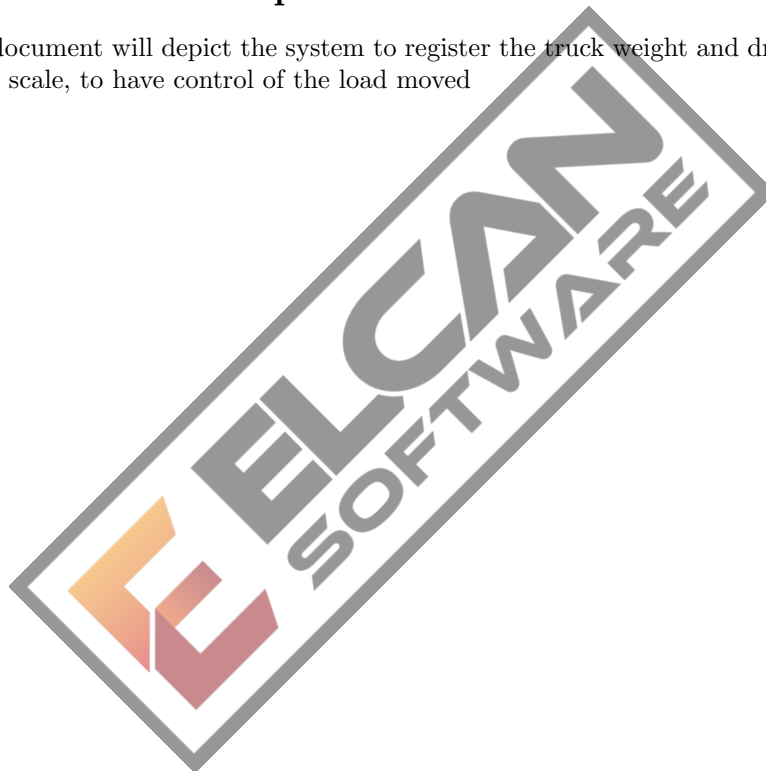
Version	Author	Reviewer	Approver	Date	Change log
1.0	Mario O. Villarroel			2018-08-20	Initial Version

2 Project distribution list

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3 Document Purpose

This document will depict the system to register the truck weight and driver id over a scale, to have control of the load moved



4 Requirements

The following requirements have been gathered by the PO in meetings with the end-customer.

1. Must be able to work with a wireless network, using only a power source for its connection.
2. Must have one device to control over each scale, there are more than one scale on the customer location.
3. Must have a software that organizes and helps with the control task.
4. Must use the RFID technology that's easily available on the market.
5. May use solar power and batteries as a power source if the cost constraint allows for it.
6. Devices will stay outdoors, needing minimal care/installation to work.
7. There will be a server hooked to the network where devices will send the information "directly". This server will be online with an uptime equal or greather than 99% of the working time for the end-customer.
8. Administration software will be web based to enable a rapid development and multiple devices to access it.
9. Data for the system will always remain in-house, not depending on the internet to work on the local network.
10. Data should be accessible from the internet with a special set of credentials, using secure standards (https, ciphered password storage, etc.)
11. The Design should consider that each electronic device created must be able to work on it's own, but they will not log the weight and truck driver data internally.
12. The system cost will stay under AR\$10.000 including two electronic devices and the administration software.

TODO: Add more requirements regarding the administration system.

5 Design

5.1 Electronics

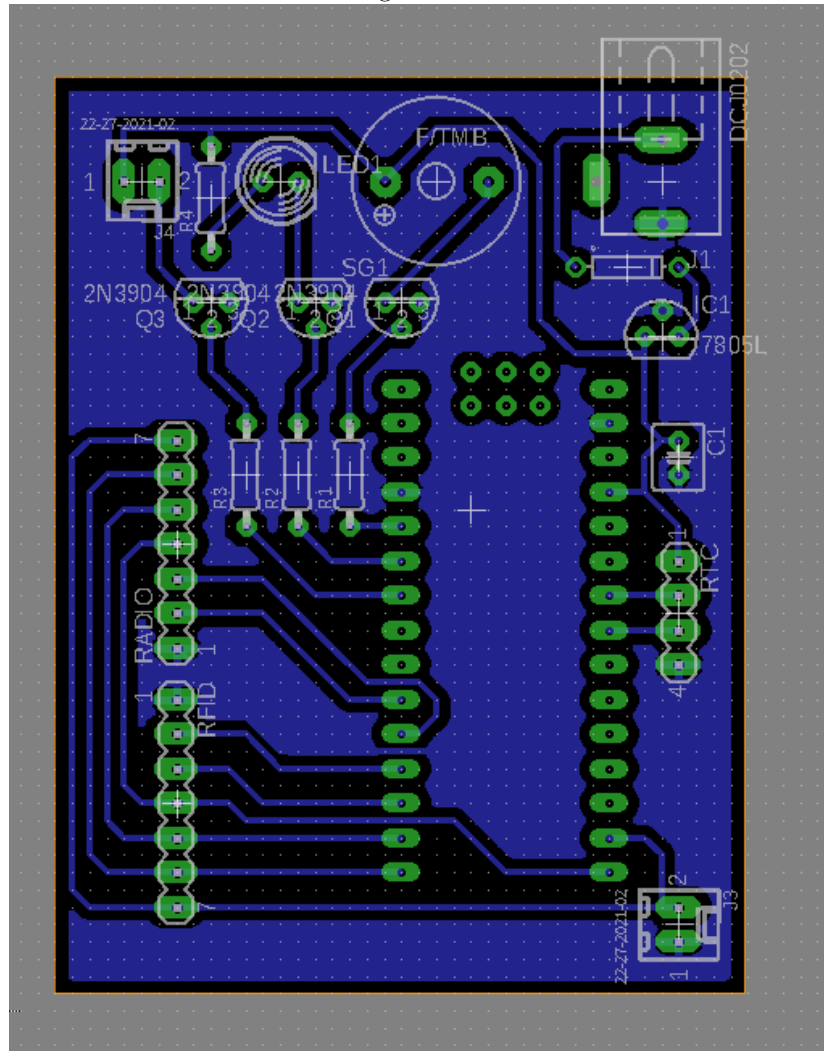
For the electronics we have selected the AVR Platform, as it's widely spread and easy to get on the Argentinean market.

This chip-set also allows the usage of C++ for the source code, which enhances maintainability and long term project duration by that.

The final device will use a 802.11 wireless network to link the data, and the TCP/IP protocol to transport it.

The device should be held in a cabinet with good aesthetics and resistance for the weather.

Figure 1: PCB v1.0



5.1.1 assembly PCB

5.2 Administrative Software

The administration software requested will be developed in Ruby On Rails for easier/faster development times.