Attendance Taking Applications Using RFID Technology and Embedded Database Systems

André Beauchamp, President & Founder

Alexandre Beauchamp, Product Manager

Sakis Spyrou, Project Manager

Topics of Discussion

- Introduction to Plurilogic
- Use of RFID Technology in Schools
- Use of RFID and ZEN for Implementing a Distributed Student Attendance System
- Quick Demo of the RFID Solution

Introduction to Plurilogic

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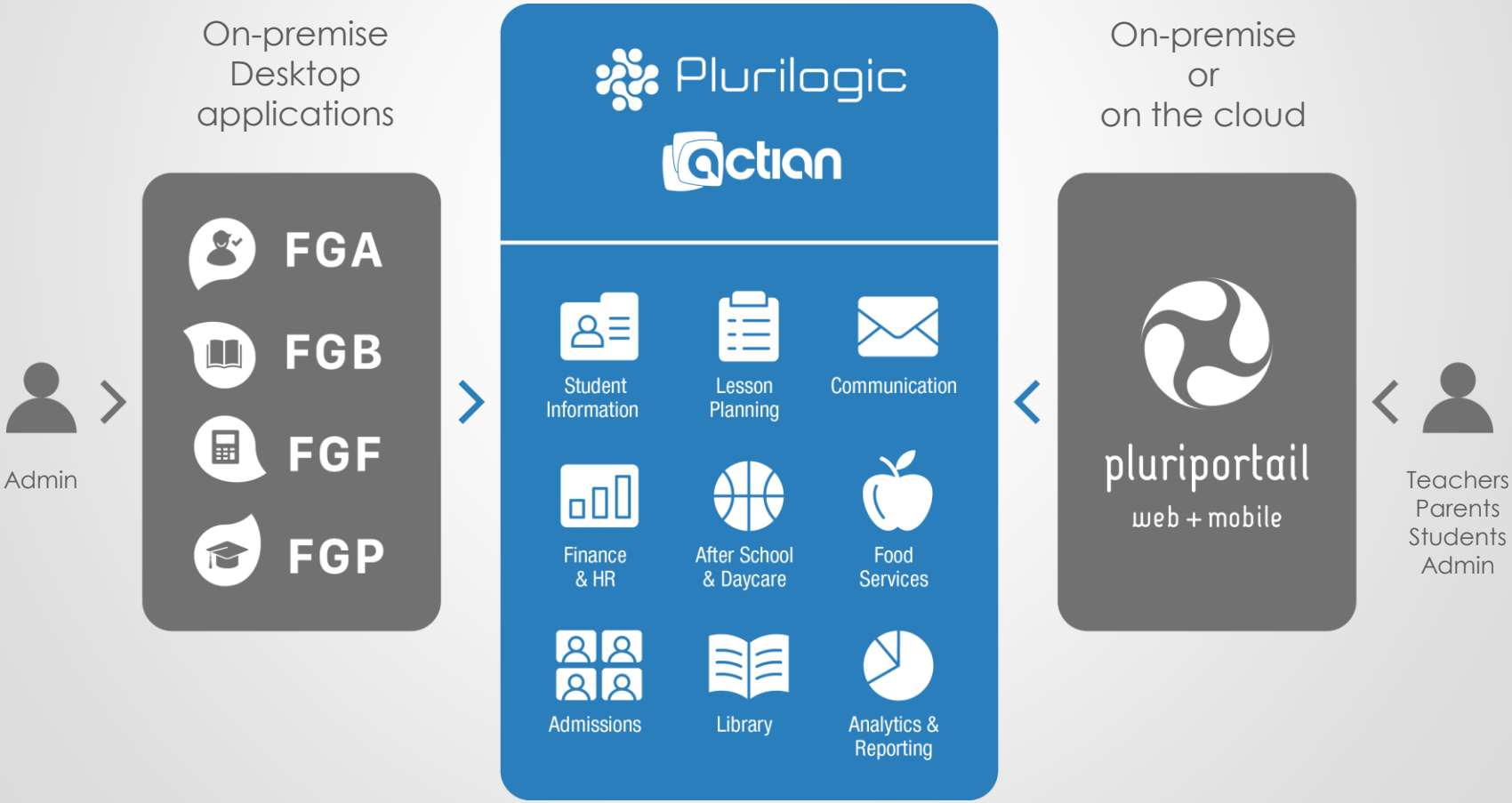
- Independent Software company specializing in education.
- Founded by André Beauchamp in 1983 in Laval, Québec.
- Currently over 20 full-time employees and growing.
- Leading school information system for private schools in Quebec.
- Our software has been implemented in more than 100 schools; over 250K users use our systems on daily basis.
- OEM partnership agreement with Actian since 2016.
- It's our 4th participation at the Actian Tech conference.

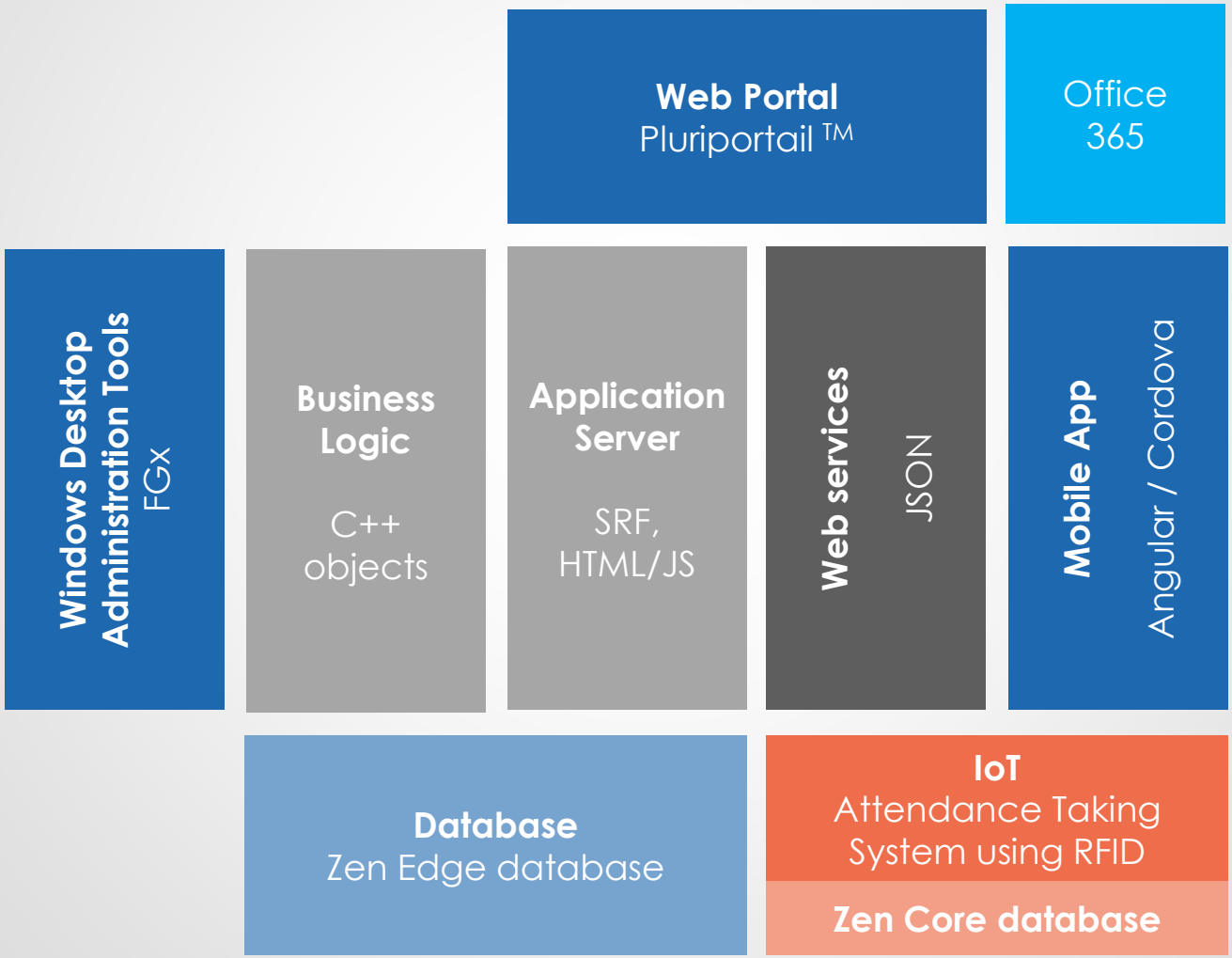
Our Technology & Vision

The Plurilogic Integrated School Management Platform

An ERP for Schools



The Plurilogic Platform Architecture



RFID Use Cases for Schools

Plurilogic uses RFID solutions for automated tracking of information in primary and secondary schools. The following are some of the most important use cases for RFID in schools:

- Ensure that students are under surveillance and control who enters the school premises
- Automate attendance taking for regular classes, daycare and after-school activities
- Improve billing accuracy for the daycare and after-school programs
- Accelerate the library book return process
- Manage valuable school assets to prevent loss and theft (ex. Projectors, IT equipment)

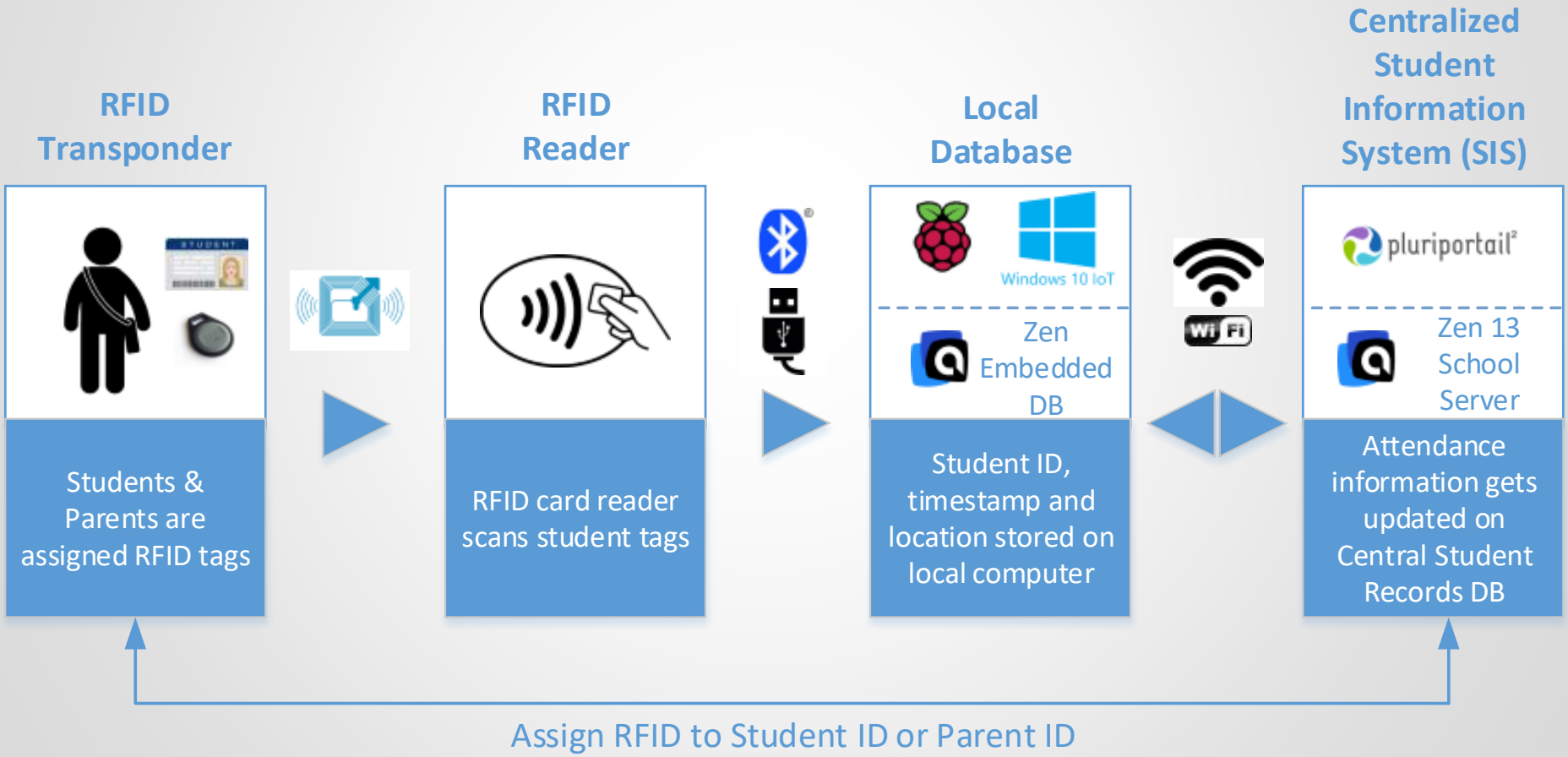
Why RFID

- No line-of-sight required for scanning
- RFID tags offer high durability and the are re-usable offering a low-cost solution
- RFID readers can be connected to low-cost platforms, like Raspberry Pi or other single board computers and mobile devices.
- Typical read ranges for UHF passive tags are a few inches to a few feet.
- Can read many tags simultaneously.
- Replication of RFID tags is difficulty which ensures security.

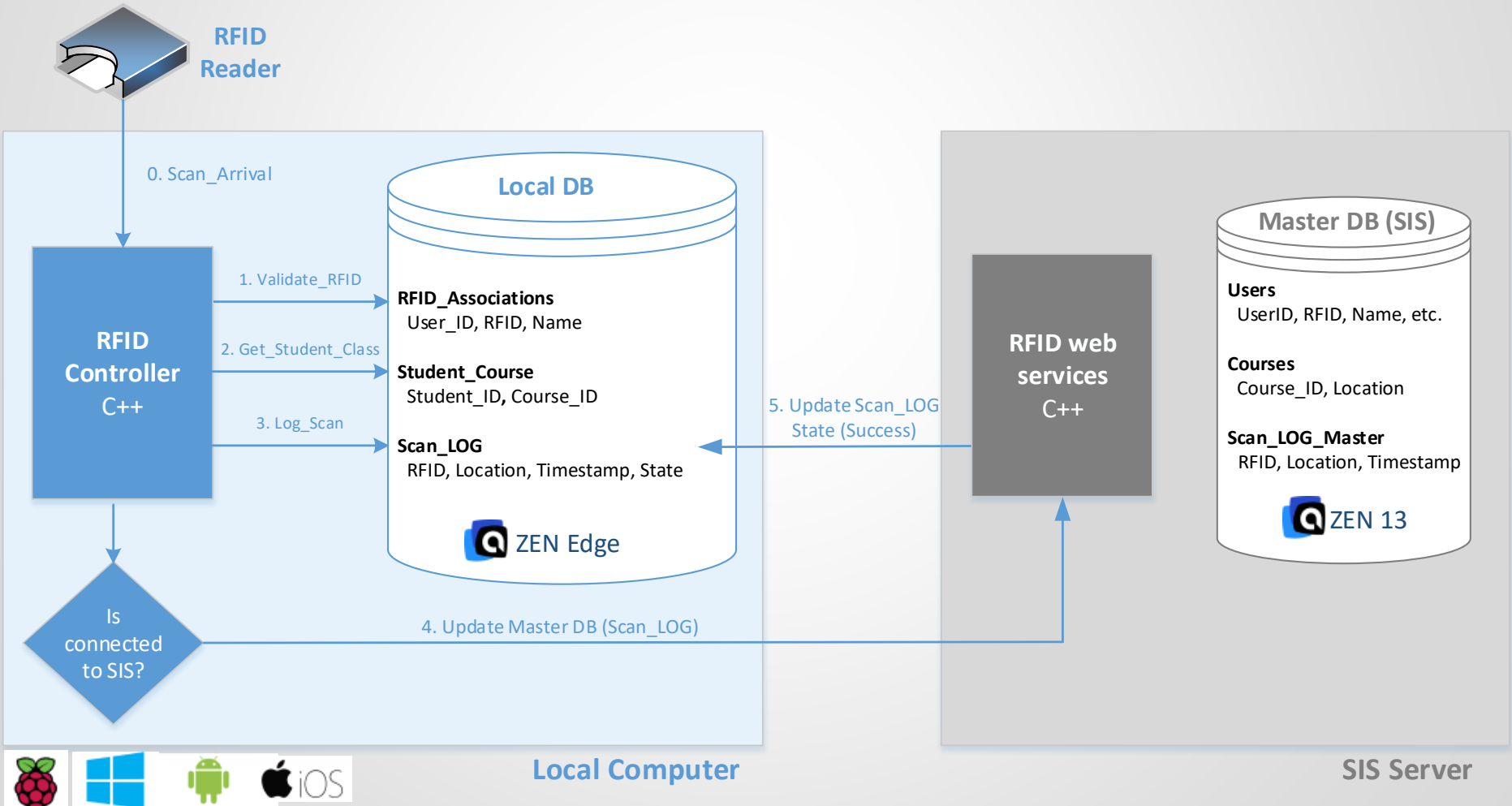
The Plurilogic RFID Solution

- RFID tags are given to students and parents in the form of RFID cards or bracelets .
- Unique RFID numbers are generated and associated to student records in centralized database (SIS).
- RFID readers are installed at various locations (school gates, cafeteria, library, etc.), connected to small local computers equipped with wifi connectivity.
- Whenever a parent or student crosses a scan location, information is immediately stored on the local computer.
- The local computer will update the centralized student of record database (SIS) if the read process is completed and connectivity is available.

Attendance Taking RFID Solution Overview



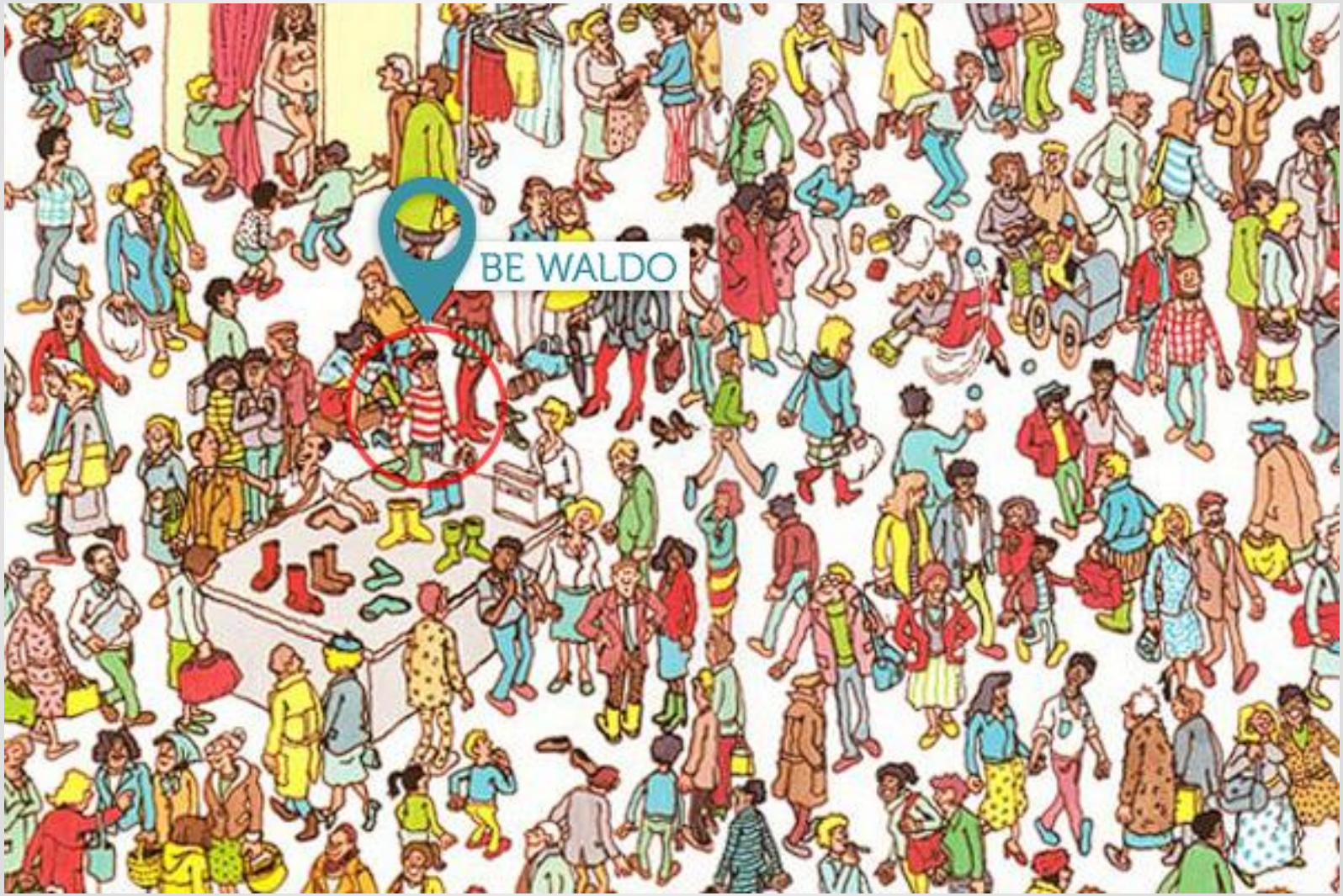
Attendance Taking RFID Solution Architecture



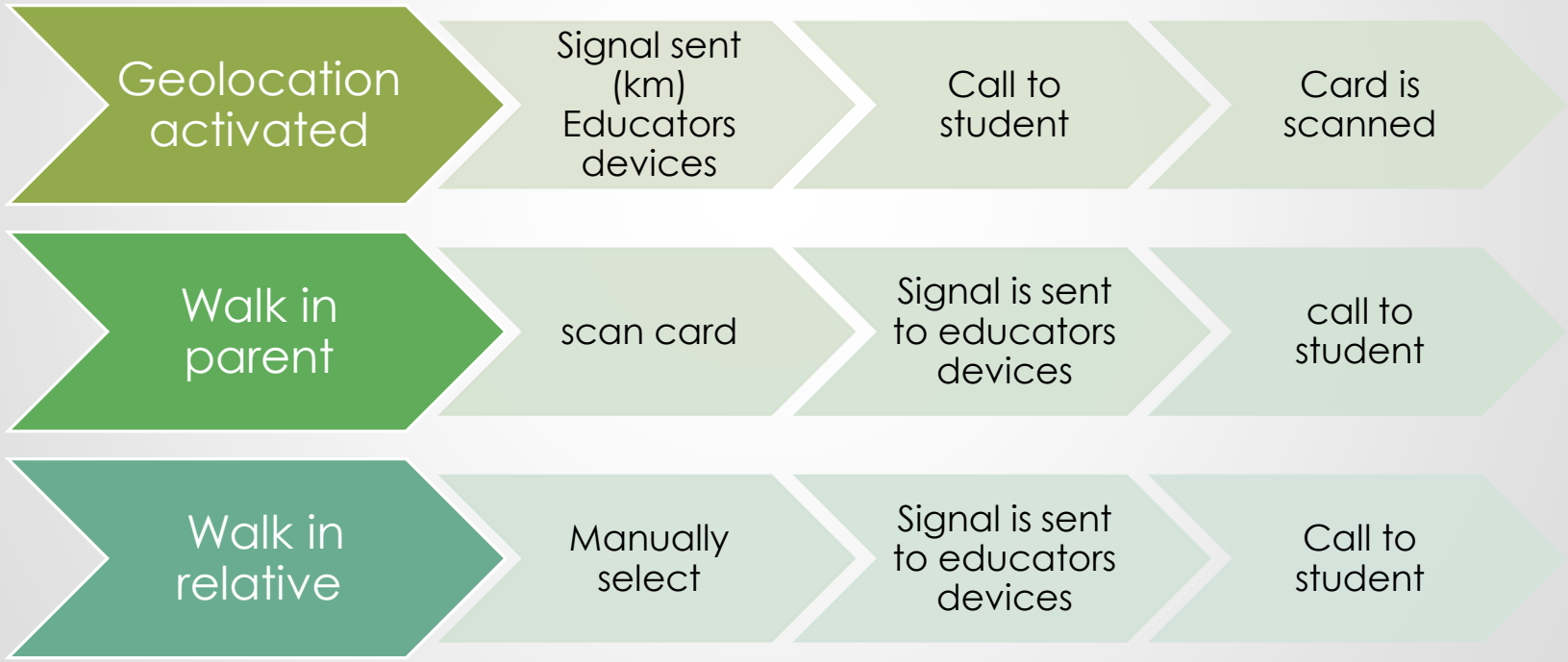
Attendance Taking RFID Solution Implementation Examples

```
#ifndef RFID_H
#define RFID_H
#include <QObject>

namespace Ui {
class RFID;
}

class RFID : public QMainWindow
{
    Q_OBJECT

public:
    explicit RFID(QWidget *parent = 0);
    ~RFID();
signals:
    void dataready(QString data);

};

#endif // RFID_H
```

Daycare Demonstration: Where is Waldo?



Daycare Demonstration: Process Overview



Daycare Demonstration