

Work-in-Progress: Using Li-Fi to control Automated Guided Vehicles. Steps towards an industrial market product.

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Introduction

Some industries use infrared communication to control AGVs* in industrial environments. This induces **alignment constraints**.



Vibrations of the AGV may lead to **misalignment** and thus **packet loss**.

➔ The paper proposes the study of using **Li-Fi** instead of LASERs



What is Li-Fi



Combination of lighting and communicating

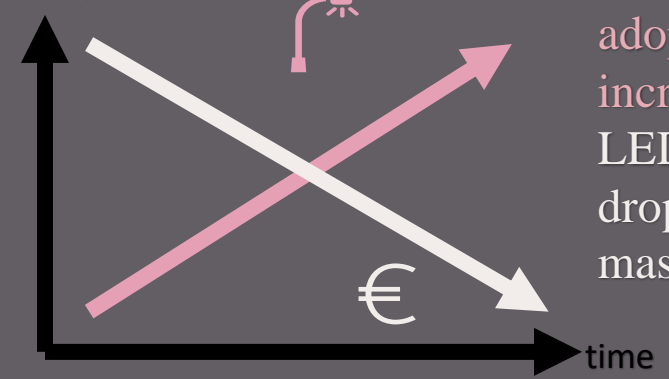
Downlink in VLC* and uplink in IRC**

Immune to RF interferers

Broad radiation pattern of the LED

Modulation of the LED's current at the pace of the data

Price/unit
lamp



Urban LED
adoption rate is
increasing.
LED lighting price
dropping thanks to
mass market



VLC*: Visible Light Communication

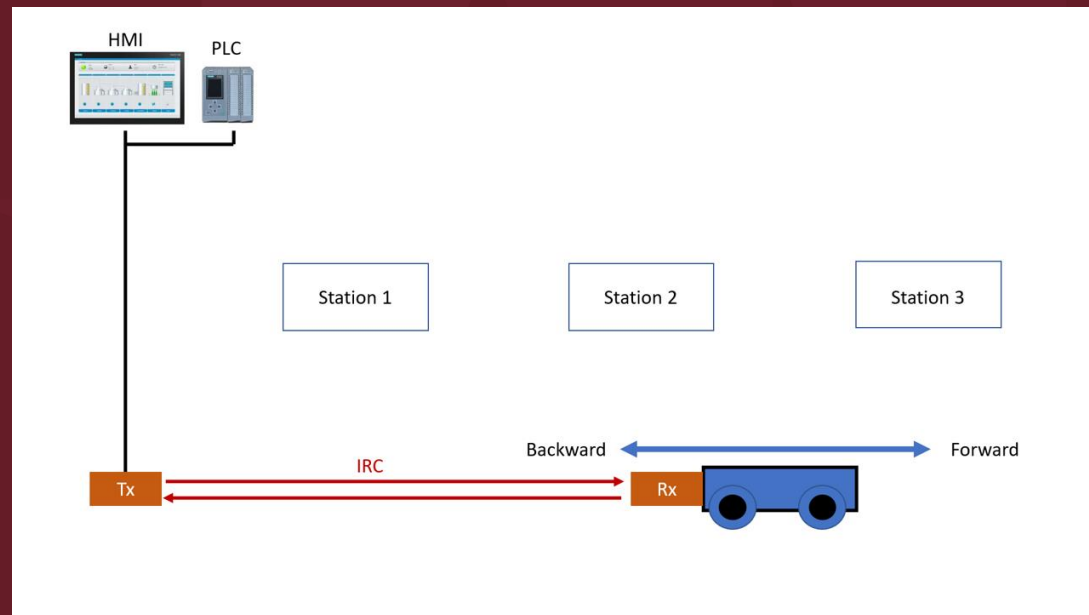
IRC**: Infrared Communication

RF***: Radio Frequency



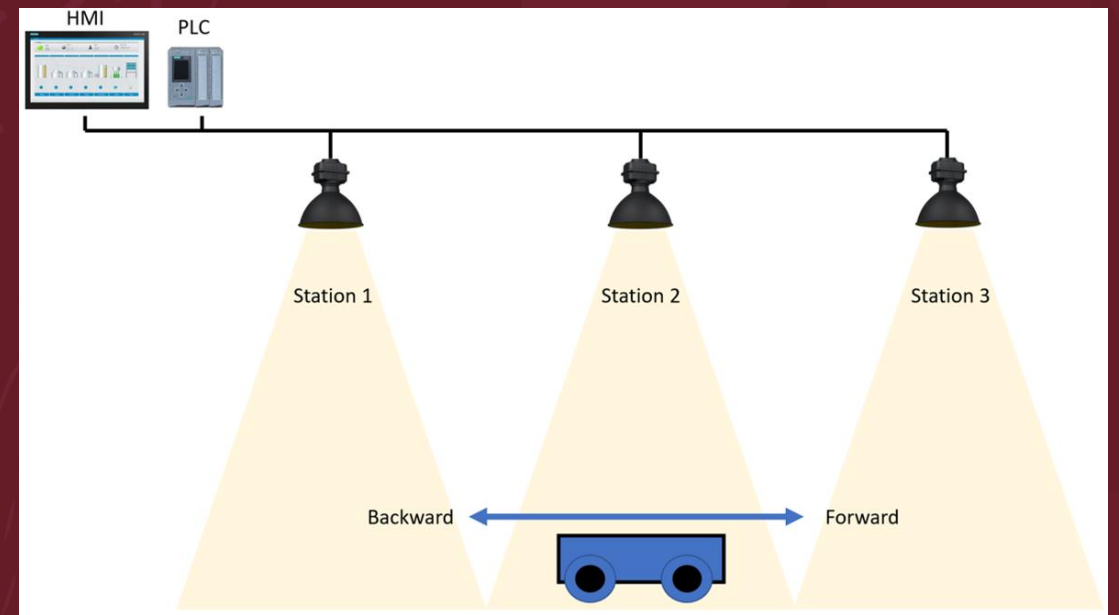
Architecture of the Li-Fi solution

LASER communication

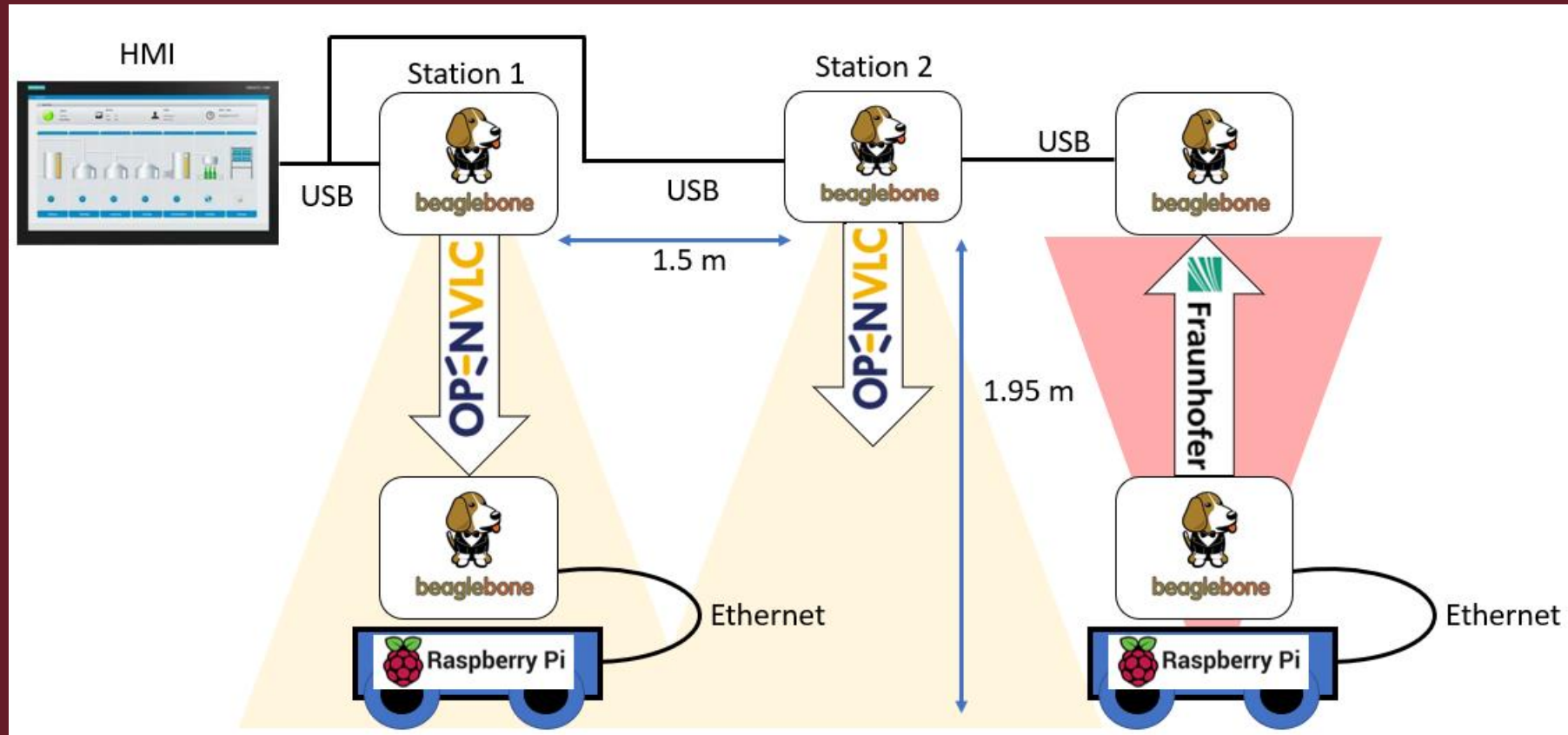


VS

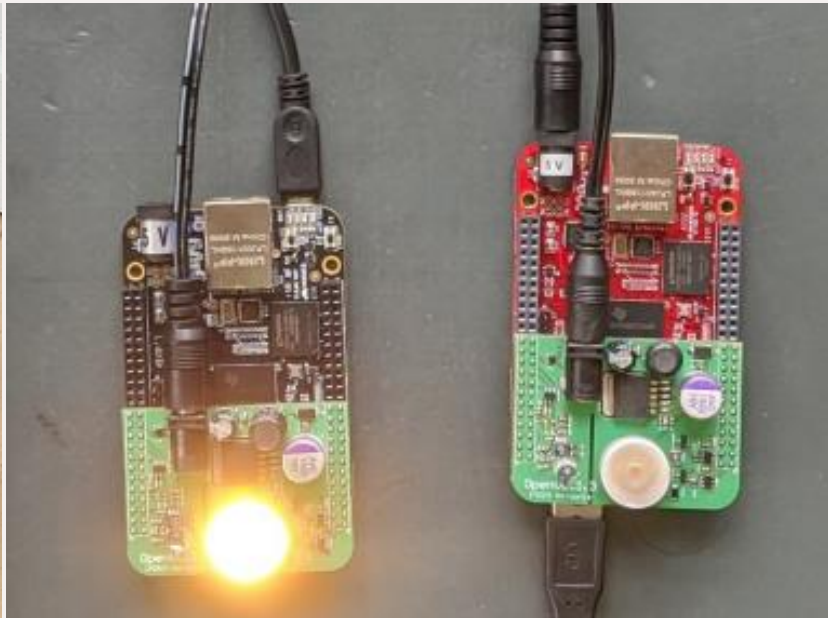
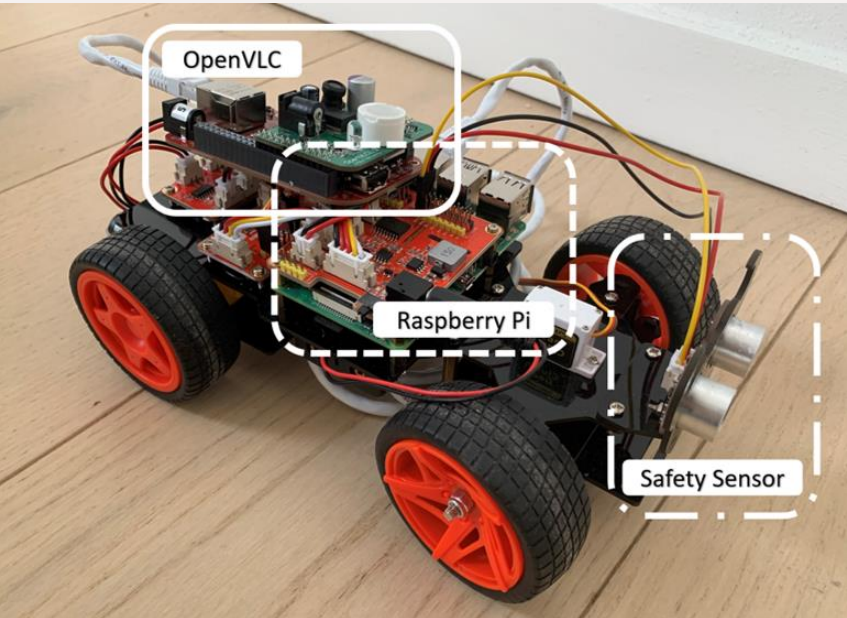
LED communication



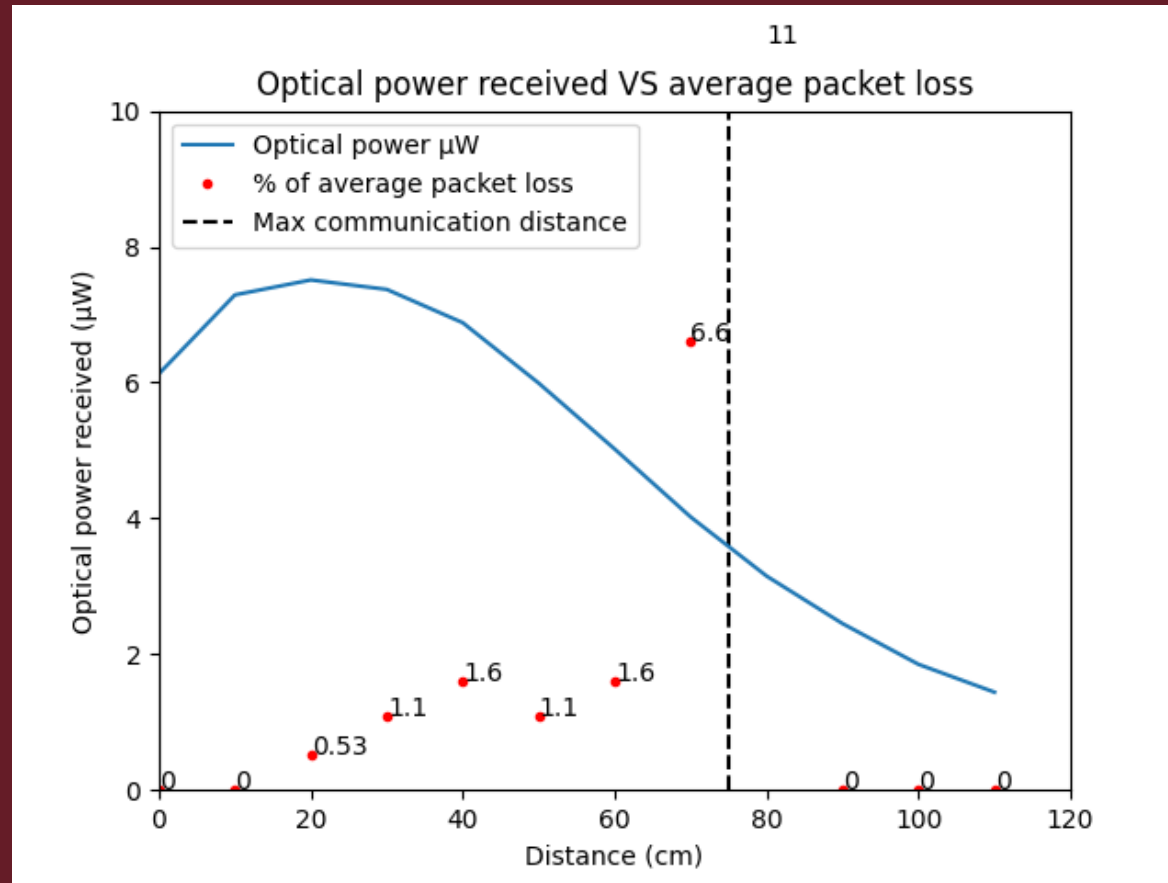
Small scale prototype



Small scale prototype

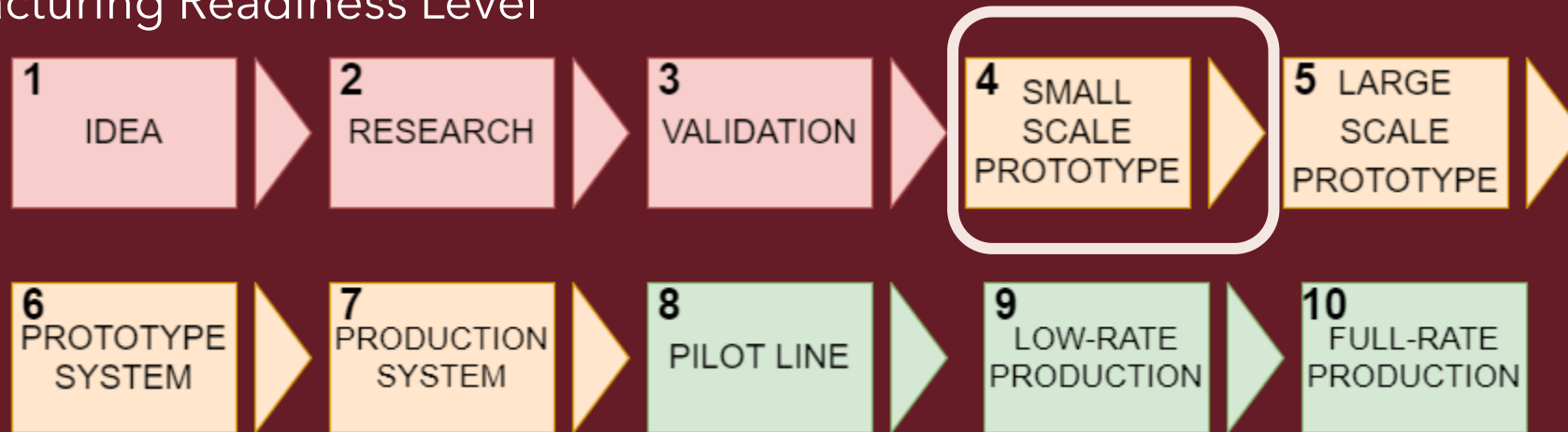


Small scale prototype



MRL* of Li-Fi

* Manufacturing Readiness Level



Conclusion

The mass market still needs time to adopt Li-Fi but opportunities already exist for the industry 4.0.

