



Less is more with the latest controller technology development:

PTC-1[®] Remote Lamp Control System (RLCS)

Peter Cattell, Solutions Manager – Urban
Imtech Traffic & Infra



Introduction

- Need for safe & reliable technology solutions
 - Supporting the management of congestion
 - Enabling the continued economic regeneration
 - Delivering more for / with less

- Careful management of transport infrastructure
 - Maximise the use of what currently exists
 - Minimising expenditure
 - Delivering sustainability

- Presentation will look at the latest in smart technology
 - PTC-1 Remote Lamp Control System



Background

- Increased traffic congestion across our networks;
 - Impacts journey time reliability
 - Increases risk to public safety
 - Raises levels of harmful emissions

- Traditional traffic controllers are already doing what is required;
 - Supporting variety of communications interfaces
 - Web interface for ease of set up and management
 - Integral features for UTC, RMS etc

- The significant costs lie in the infrastructure to support the technology not the technology itself



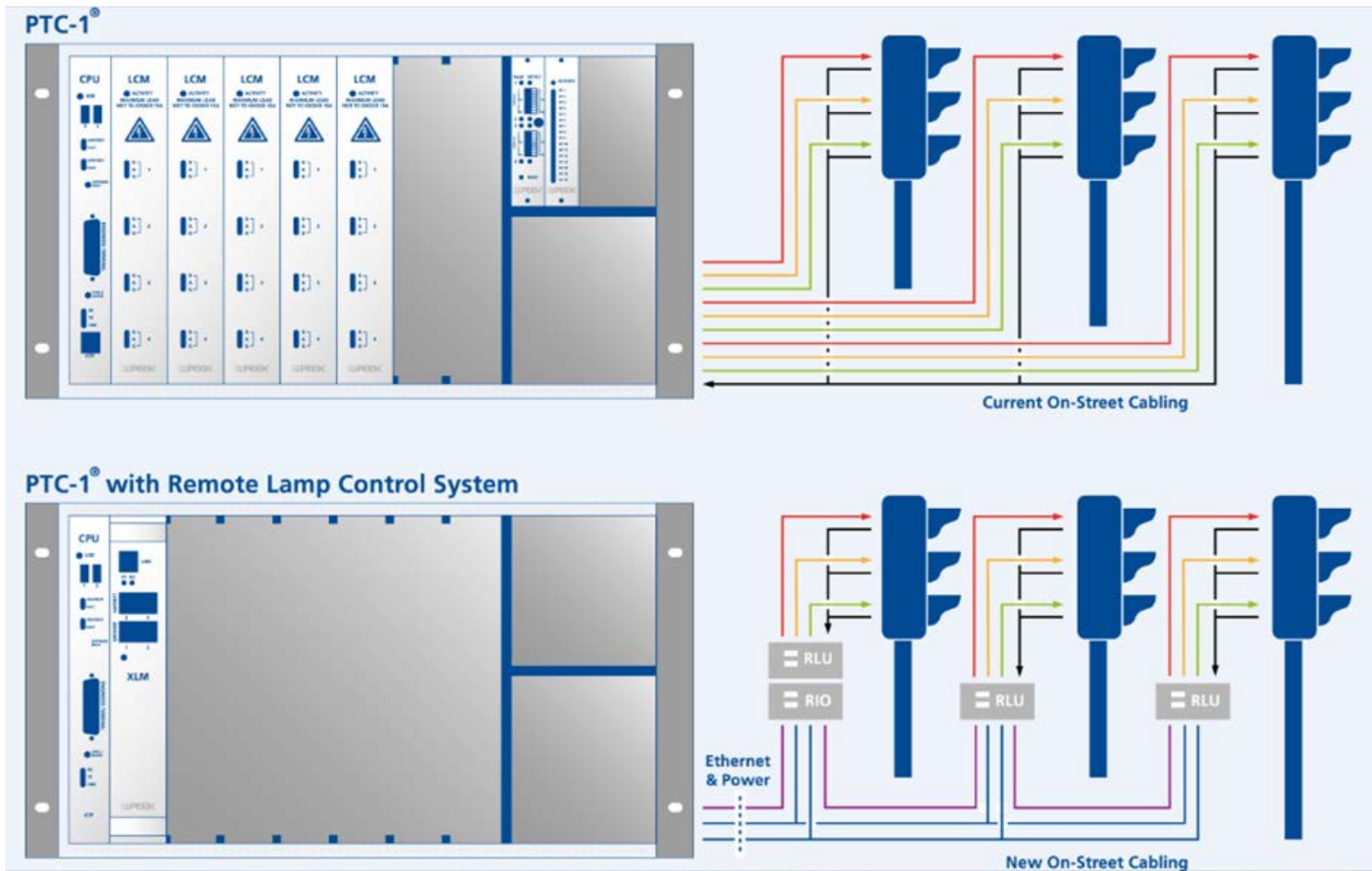
Smart Technology

- Look to ‘smart’ technology to enable the development of a traditional traffic controller;
 - Reducing the cost of the overall scheme
 - Removing the need for extensive cable and ducting infrastructure
 - Minimising congestion and disruption to road users

- Remote Lamp Control System (RLCS)
 - New development for the long established PTC-1 traffic controller
 - Moves elements of the traditional traffic controller into some of the signal heads;
 - reducing on street cabling and related infrastructure work and effort; traffic management, civil engineering, time and cable.



Technology Solution





Technology Solution

■ Remote Lamp Unit (RLU9)

- Signal aspects are connected directly to the RLU9 in the signal head and the information transfer with the controller is via an Ethernet connection (Safety Network)
- A single RLU can support 9 aspects

■ The Remote IO (RIO)

- The RIO is also connected to the Ethernet network (Standard) and this transfers all the detection information back to the controller
 - This network can also connect to third party detection platforms
 - Additional technology such as CCTV or any other IP based network can also benefit from this existing connection.



Technology Solution

- Audible units can be driven from the RLU via an Audible Driver Unit (ADU). The inhibit is controlled by an RIO output. The ADU is also mounted in the signal head.

- New dedicated Ethernet and power (48V) cable(s)

- New cable termination options are also being developed;
 - Currently evaluating pole cap, pole base and signal head variants

- The safety element of the PTC-1 remains intact;
 - based on already proven technology the PTC-1 RLCS delivers a fully TR2500 compliant controller.



Detection

- Currently designed to work with traditional loops, however this will clearly not deliver maximum cost savings.
- Works with magnetometer based solutions and removes the need for the additional detector card, as the CPU communicates directly with the access points.
- Recognise that this solution needs to enable the use of new detection technologies and support a variety of options
 - Currently working with a number of technology partners looking at wireless/Ethernet compatible detection systems.



Infrastructure

- Site design layout will be site specific depending on;
 - Size
 - Existing infrastructure
 - Geography

- Two simplest options would be;
 - Daisy chain around the whole site or
 - Radial approach i.e. to each approach
 - Ideally locating the equipment in the poles that are least vulnerable, noting that not every head will house equipment



Installation

- Largely the same as the current installation process;
 - Reduces cable pulling
 - Reduces time on site
 - Reduces use of large cable drums

- Improved safety with;
 - Less time spent crossing the road
 - Less traffic management
 - Less manual handling



Cable Installation

- New cable(s) can be;
 - Installed in existing ducting systems (<50mm)
 - Slot cut or installed using micro-trenching techniques





Maintenance

- Cable failure / accidental damage
 - Same approach as traditional site installation on cable repair or replacement
 - Only one or two cables to be replaced

- Knock-down
 - Remote Lamp Units (RLU) can be moved around the network, the controller will still run with the damaged pole missing
 - Using the existing web based management tools, the RLU's can be turned off so the controller will run with out them
 - The technology is housed in sturdy metal units, designed to withstand high impact



Benefits

- Based on calculations from a basic pedestrian crossing to a large junction, overall cost reductions of up to 30% are possible

- Cost reduction on the overall scheme;
 - Civil Engineering - ducting & infrastructure
 - Traffic Management
 - Time to install
 - Cable

- Minimise congestion & disruption to road users;
 - Reduced Traffic Management
 - Reduced on-site safety risks
 - Reduced environmental impact



Thank you for listening,
any questions?