Pedestrian Countdown
A Practical Guide to Delivery on London's Streets

Adam Scriven
Chief Engineer Signals Delivery
Transport For London

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OVERVIEW

- Background

- Londons 'Roll Out'

- Design

- Implementation

PC@TS installation works at Trafalgar Square

Practical Implementation of PC@TS

BACKGROUND

Why PC@TS in London?

- There is a common misconception:

> "There isn't enough green time for me to cross"
>
> "Green Man 'Too fast for slow elderly'"

- There is frequent confusion:

> "What does the 'Blackout' period mean"

- PC@TS has been shown to reduce these issues for pedestrians:

> Uncertainty reduced allowing more informed crossing decisions
>
> The 'Countdown' facility is liked
>
> After upgrade more felt they had sufficient time to cross

Research and Trials

Research

- Investigation into standardising 'Invitation to cross' Period

- Collaborative TfL and DfT review of 'Countdown' systems

- Over 300 possible combinations of design and layouts reviewed

- Independent public interviews and research carried out

'Off Street' Trials

- Carried out at Transport Research Laboratories (TRL)

- Mocked up a PC@TS Traffic Signal site

- 250 participants took part

- Reinforced view that 'Blackout' period not well understood

Research and Trials

'On Street' Trials

- Permission granted for 8 trial sites

- Video observations and Interviews

- 83% of users interviewed liked PC@TS

- Using PC@TS 88% felt they had sufficient time to cross up from 75%

- Analysis of 'conflicts' in the trial showed no increases

Authorisations for use of PC@TS

- **Department for Transport (DfT)**

  - Policy Signs Review 2011

  - Dictates the look and location of PC@TS sign

  - Site must have a blackout period

  - Can be mounted to the left or right of green man

- **Highways Agency (HA)**

  - Specification TR2581A

  - Numerical indicator counting down 'blackout' period

  - The product is a self-contained 'intelligent' unit
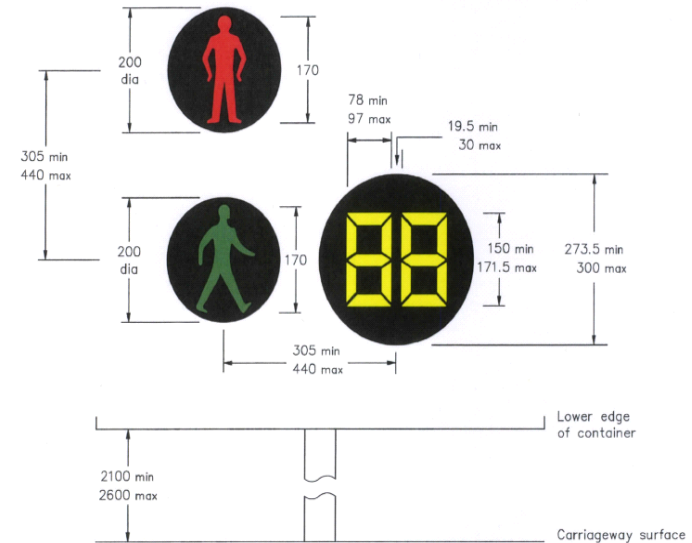
Authorised Light Signal	Dimensions do not form part of the sign
Performance requirements:	
Red/green figures	BS EN 12368: 2006
Countdown unit numerical display	BS EN 12966-1: 2005+A1: 2009

London PC@TS Justification

London considers the PC@TS upgrade to any site as a 'Package' of measures with both Pedestrian and Traffic Benefits

- Standardisation of Green Man to 6 Seconds

- Standardisation of 'All Red' time to 3 seconds

- Increase in 'Black Out' time with countdown timer displays

- More information allows users to make more informed crossing decisions
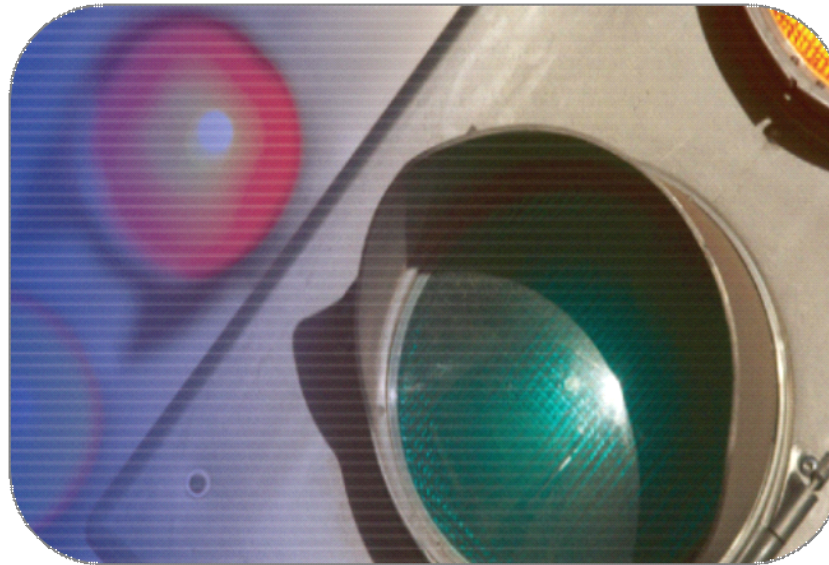
- Potential for increases in traffic green time

Practical Implementation of PC@TS

LONDON'S ROLL OUT

London's PC@TS Delivery Programme

- London has over 4900 Traffic Signal Locations

- PC@TS is now installed at over 100 of these locations

- PC@TS will be installed at 200 locations by the end of this year

London has approximately one third of the total number of traffic signals in the UK

Planning London's PC@TS Delivery Programme

- Strategic Planning:

  - Building a Business Case, Cost Model and Maintenance Strategy

  - Ensuring consistent standards and 'Look and Feel' of PC@TS

  - Securing Equipment supply

  - Develop site selection criteria

- Delivery Planning:

  - Co-ordinating Borough and Client programmes of work

  - Co-ordination with Asset Investment and upgrades

- Understanding our assets:

  - Site surveys

  - Types of Equipment

  - Ducting network condition

  - Cable identification and design

Key Challenges in London's PC@TS Delivery Programme

Each year there are over 1000 schemes carried out on London's Traffic Signals, these range from minor configuration changes to full 'Modernisation' of the infrastructure.

- Scheduling Work

  – Meeting client programmes

  – Balancing Signal Contractor Workloads

  – Co-ordinating Civil Engineering Work

- Permitting

  – Ensure Road Space bookings and permits are in place

  – Minimise 'Lane Rental' costs

- Design Changes

  – Incorporate clients changing requirements

  – Deal with on site issues that impact design

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DESIGN

Site Suitability

High Level Site Requirements

The site requirements for PC@TS to be authorised are:

- Fixed blackout period
- Far-sided pedestrian signals
- Permanent signal sites

TfL Strategies

- Exclusive 'All Round' Pedestrian Stage

- 'All Round' Pedestrian supplemented with 'Walk With' pedestrian stages

- Exclusive 'Walk With' traffic Pedestrian Stages

- Stand Alone straight over crossings

- Staggered Crossings and Louvered Green Pedestrian signals

- Junctions or Standalone crossing with Far-sided Toucan Facilities

Signal Timings

London's "Golden-Rules" for PC@TS sites

- The 'all red' period must be three seconds long (The remaining intergreen time will be the 'blackout' period.)

- The 'Blackout' period is determined by the crossing width and the average pedestrian walking speed of 1.2m/s

- 'Blackout' periods are not variable and must be fixed in the PROM so that they cannot be changed on site.

- The minimum 'Invitation to Cross' (green person) period should be 6 seconds

Practical Implementation of PC@TS

IMPLEMENTATION

Equipment

- LV and ELV units available

- Only require 7 cores for connection as 'Intelligent' unit

- 'Self-learning' unit derives timings from pedestrian red and green

- Powered by switched/regulatory sign output

- PC@TS is treated as a 'Phase' in the controller

- Master 'kill' switch fitted for PC@TS

- PSU can only support 8 units

- Non-dim kit fitted to ensure power supply
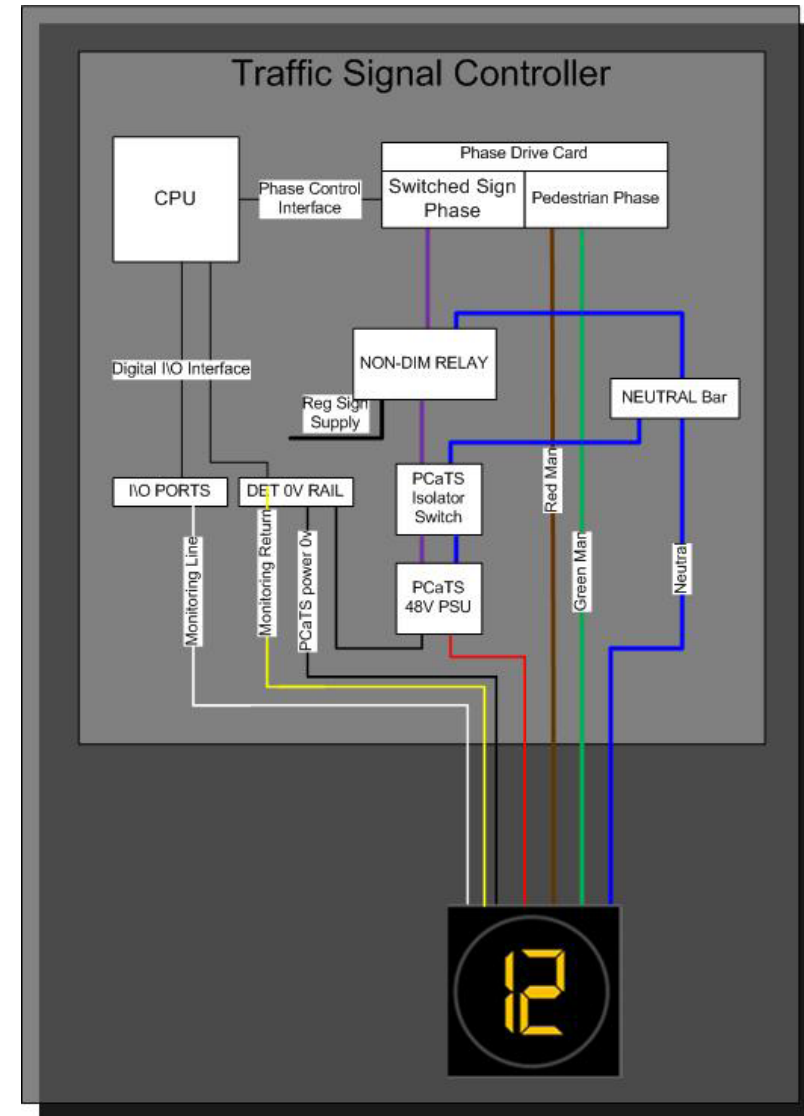
Configuration

- Switched sign output must be configured as a 'real' phase

- Associated hardware for phase is required

- Input from PC@TS inverted (open circuit active)

- PC@TS DFM active time set to 15 minutes

- Under UTC 'JM' or 'PM' bit returned if there is a PC@TS fault

'Special Conditioning' Statements

Lamps on stream/s = Power to PC@TS unit

Lamps off stream/s = No power to PC@TS unit

If RLF2 during the 'blackout' period then power to the PC@TS should be immediately switched off

Commissioning

- What to check:

  - Ensure units 'learn' and count down correctly

  - Ensure 'All Red' Periods are 3 Seconds

  - Ensure each unit has a working fault monitoring input

  - Check units work when site is dimmed

- What can go wrong:

  - Units fail when dimmed

  - PC@TS cable short circuit

  - Correct brackets have been supplied

  - PC@TS cable too short

Conclusion

PC@TS Technology is fit for large scale 'roll out'

- Research and trial data available to support implementation

- HA and DfT Approvals are in place for PC@TS

- London specific suitability and design standards are in place

- Suitable Equipment is available for LV and ELV sites

- Controller configuration and hardware requirements understood

- PC@TS specific commissioning checks identified

TfL has produced a Technical Information Pack, this is intended as a resource for other Local Authorities in England who are considering implementing Pedestrian Countdown;

http://www.tfl.gov.uk/businessandpartners/publications/25956.aspx

Questions