DCIS
The Digital Controller Interface Standard

DIGITAL TWINS OF SIGNALS FOR A CONNECTED FUTURE

Overview/Recap

DCIS (Andy Graham, Peter Routledge, Jon Wade and Mark Pleydell) is implementing three standards defining

1. The number and type of signal-controlled sites in the UK
2. The topology of each site and location of signals.
3. The control strategies and parameters applied at each site.

And processes for their creation and distribution

Why?

To make signal control data available in uniform and open format.

Enables a range of benefits eg

- simplifying and speeding up UTC configuration
- and microsimulation modelling, through
- Connected vehicle services
- laying a base for autonomy of vehicles on the UK's road network,

- Digitising roads needs digital signals

What does this do and where is it?

The Deliverables

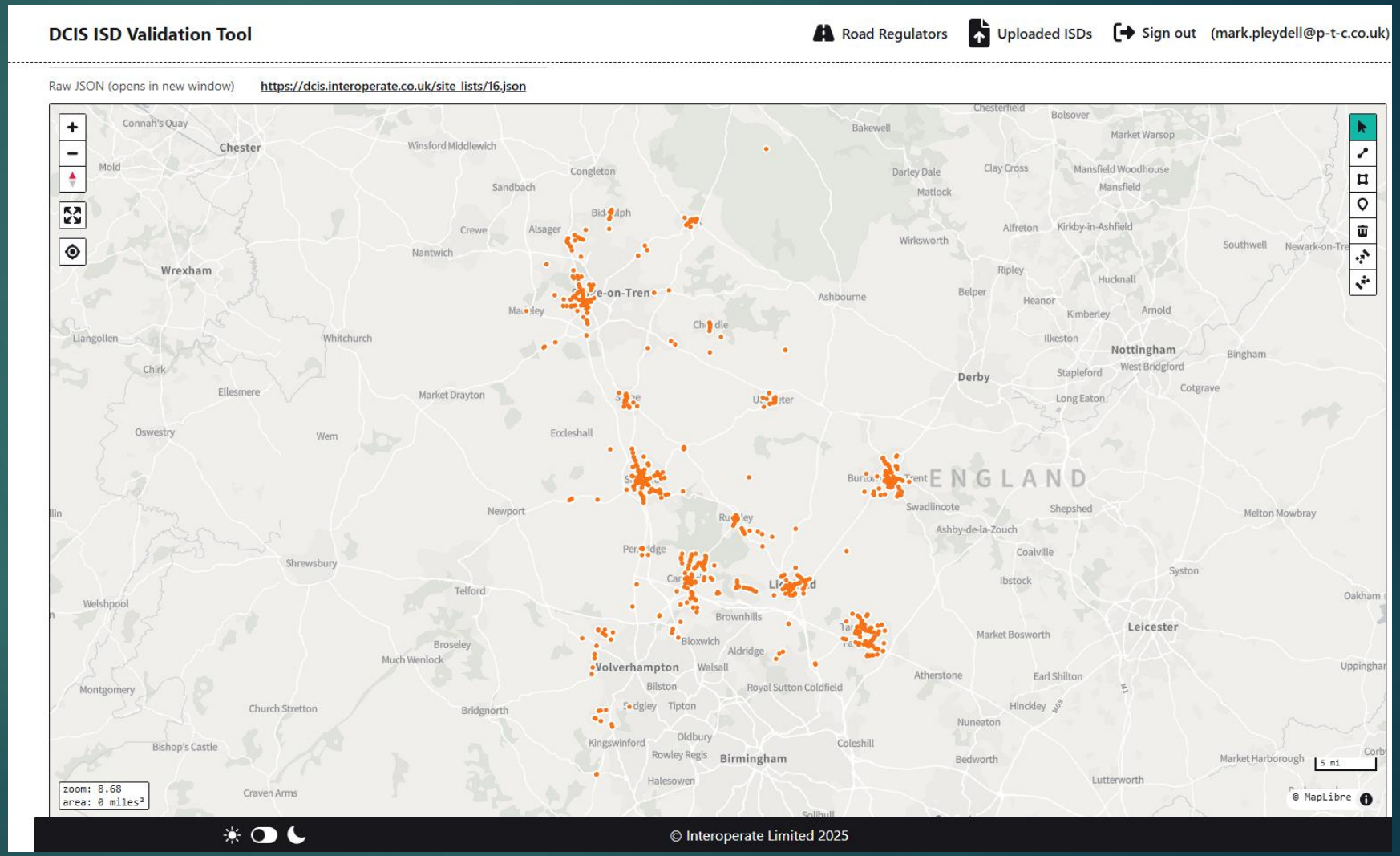
- The Intersection Summary Document (ISD)
- The site topology: A MAPEM file to the C-Roads standard
- The “e2500”, echoing the TOPAS 2500 signal controller definition, and site configuration.

The ISD

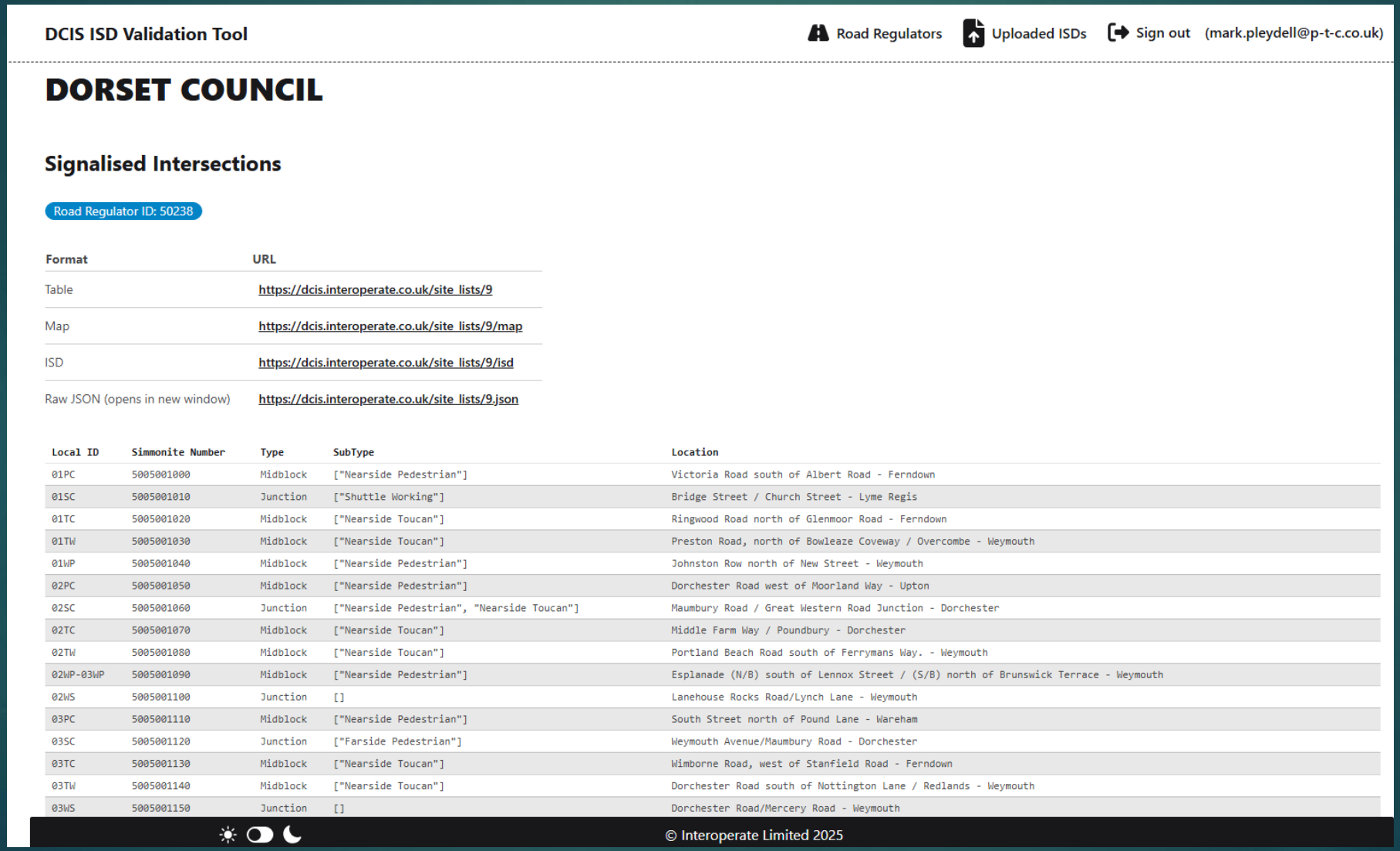
- A list of all signal-controlled sites falling within boundaries of a local highway authority (whether or not they actually own the site).
- Uploaded to a central depository that does checking
- Each site (and each stream) has its own unique Simmonite number.
- DCIS has trialled the ISD process with Bath & NE Somerset, Dorset, Hull, Kirklees, Leeds, Staffordshire and TfGM – our thanks

- Some tweaks to our guidance to come
- WE STRESS YOU DON'T NEED TO RENUMBER YOUR SITES

Beta test data – Staffordshire CC locations



Beta test data – Dorset CC List



DCIS ISD Validation Tool

Road Regulators | Uploaded ISDs | Sign out (mark.pleydell@p-t-c.co.uk)

DORSET COUNCIL

Signalised Intersections

Road Regulator ID: 50238

Format	URL
Table	https://dcis.interoperate.co.uk/site_lists/9
Map	https://dcis.interoperate.co.uk/site_lists/9/map
ISD	https://dcis.interoperate.co.uk/site_lists/9/isd
Raw JSON (opens in new window)	https://dcis.interoperate.co.uk/site_lists/9.json

Local ID	Simmonite Number	Type	SubType	Location
01PC	5005001000	Midblock	["Nearside Pedestrian"]	Victoria Road south of Albert Road - Ferndown
01SC	5005001010	Junction	["Shuttle Working"]	Bridge Street / Church Street - Lyme Regis
01TC	5005001020	Midblock	["Nearside Toucan"]	Ringwood Road north of Glenmoor Road - Ferndown
01TW	5005001030	Midblock	["Nearside Toucan"]	Preston Road, north of Bowleaze Coveway / Overcombe - Weymouth
01WP	5005001040	Midblock	["Nearside Pedestrian"]	Johnston Row north of New Street - Weymouth
02PC	5005001050	Midblock	["Nearside Pedestrian"]	Dorchester Road west of Moorland Way - Upton
02SC	5005001060	Junction	["Nearside Pedestrian", "Nearside Toucan"]	Maumbury Road / Great Western Road Junction - Dorchester
02TC	5005001070	Midblock	["Nearside Toucan"]	Middle Farm Way / Poundbury - Dorchester
02TW	5005001080	Midblock	["Nearside Toucan"]	Portland Beach Road south of Ferrymans Way. - Weymouth
02WP-03WP	5005001090	Midblock	["Nearside Pedestrian"]	Esplanade (N/B) south of Lennox Street / (S/B) north of Brunswick Terrace - Weymouth
02WS	5005001100	Junction	[]	Lanehouse Rocks Road/Lynch Lane - Weymouth
03PC	5005001110	Midblock	["Nearside Pedestrian"]	South Street north of Pound Lane - Wareham
03SC	5005001120	Junction	["Farside Pedestrian"]	Weymouth Avenue/Maumbury Road - Dorchester
03TC	5005001130	Midblock	["Nearside Toucan"]	Wimborne Road, west of Stanfield Road - Ferndown
03TW	5005001140	Midblock	["Nearside Toucan"]	Dorchester Road south of Nottington Lane / Redlands - Weymouth
03WS	5005001150	Junction	[]	Dorchester Road/Mercery Road - Weymouth

MAPEM – Site Topology

- Following the C-Roads MAPEM standard for topology
  - conflict zones,
  - Lanes (and pavements)
  - Permitted vehicle types (including pedestrian modes)
  - Times of access
  - Signal pole locations for control of movements
- interested in automated generation of MAPEM files.
- Is there a better way?

E2500 – The Controller Configuration

- How a controller manages each site is determined by its configuration.
- This organises the different traffic movements, the timings, methods of control etc. to get the best from the site
- Currently this content is manufacturer specific.
- The E2500 file provides an open standardised form.
  - Maximum granularity
  - Discoverability
- Currently first draft is with Signal Companies and devolved Governments
- We continue to add facilities and will be seeking forgiveness

Future Activities

- Supporting LHAs as they implement ISDs as a TSOG, GLF output.
- Extending the E2500 and progressing MAPEM
- Integrating the data with other DfT systems for controlled and secure storage and access (eg D-TRO?)
- Following Government IT processes eg D-TRO
- Testing use cases