

# Traffic Open Products and Specifications (TOPAS) A replacement for Type Approval

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## Executive summary

The Type Approval requirements and specification management activities currently undertaken by the Highways Agency on behalf of the DfT will cease when the new version of TSRGD passes into law, in the spring of 2015. Recognising that this major change in the approvals landscape would lead to a loss of standardisation and potentially considerably increase Local Authority procurement costs, ADEPT and ARTSM have worked together to propose a new body, TOPAS Ltd, to take on the role divested by the HA.

TOPAS will offer a range of procurement specifications, mirroring the main HA specifications which currently define the performance requirements for the majority of traffic control and monitoring equipment in general use. To further aid purchasing Authorities, TOPAS will also Register products that have been shown, through a verification process, to meet the specification requirements.

This paper provides an overview of TOPAS and outlines the product Registration process.

## Introduction

Type Approval is the formal authorisation to use certain equipment on the highway and is administered by the Highways Agency (HA) on behalf of the Department for Transport (DfT). The requirement for Type Approval is contained in direction 56 of the Traffic Sign Regulations and General Directions (TSRGD).

The system of Type Approval has been revised a number of times and the present system relies on manufacturers self-certifying their products against HA standards. Recently Type Approval has come under scrutiny due to the costs associated with it, and also challenges from Europe with regard to Mutual Recognition, which requires equivalent products manufactured to the specifications of other EU countries to be accepted. The specifications themselves have increasingly become less prescriptive, in part reflecting the demand from Europe that they should not present a barrier to trade and in part the desire to focus on outcomes, rather than stipulating how manufacturers should achieve these.

In June 2012, the Association for Road Traffic Safety and Management (ARTSM) and the Traffic Systems Group (TSG) of the Association of Directors of Environment, Economy, Planning & Transport (ADEPT), formed a joint Traffic Technology Forum (TTF), to represent suppliers and users of traffic control and associated equipment.

One of the aims of the TTF was to manage consultations with the DfT and HA, specifically to discuss emerging specifications as a single body and particularly to reduce the scope for operational problems in the future, such as lack of interoperability. (Previously the Electro-technical Industries Traffic Control Advisory Committee (EITAC) had provided a focus for Industry and Users to exchange ideas and to discuss national technical specifications, but EITAC had folded some years before).

The impetus to form the TTF came from the anticipated withdrawal of the HA from the maintenance of national technical specifications. Linked to this was the review of TSRGD, which had recently commenced and specifically the likely removal of the requirement for Type Approval of traffic control equipment. Together these two changes raised concerns for manufacturers and local authorities about the loss of standardisation and an associated increase in procurement costs. The DfT recognised the concerns and encouraged the TTF to bring forward proposals to manage national technical specifications and approvals, to coincide with the planned revisions to TSRGD.

The TTF responded to this with the Traffic Open Products and Specifications (TOPAS) proposal, which will see the formation of a new body, TOPAS Ltd, to oversee the maintenance and ongoing development of many of the specifications currently owned by the HA. One consequence of the removal of the legal requirement for Type Approval is that compliance with the new TOPAS specifications will no longer be mandatory, but each will become a Purchasing Specification against which Manufacturers will be able to register their products. The aim is to minimise procurement costs by enabling Purchasing Authorities to simply require that the products being purchased are registered against the relevant TOPAS specification.

The TOPAS proposal is included in the current DfT consultation on the changes to TSRGD. It is important to emphasise that it has emerged in response to user concerns that the benefits of standardisation and a ready means of verifying product compliance with specifications could be lost and that the success of TOPAS will rely on purchasers requiring TOPAS registered products in the future, in the same way they currently do for Type Approval. If this requirement is not included in tender documents then TOPAS may not be sustainable and the benefits that users have sought to protect will be at risk.

## TOPAS in detail

### TOPAS principals

Fundamental to the TOPAS solution is that Manufacturers are required to offer their products for Registration by TOPAS, so that purchasers of those products can have confidence that the equipment they purchase has been designed and tested within an appropriate quality system and meets the requirements of the relevant TOPAS specification.

As part of the design and verification process, Manufacturers will be required to produce a Technical File, the contents of which will be prescribed in each TOPAS specification and will vary depending on the product. For example a Near Side Indicator will require independent testing and recording of its optical performance and the results of the tests will be part of the Technical File. However it would make no sense to require a traffic controller registration request to include optical performance tests, as there are no optical performance requirements in the relevant HA or TOPAS specification. In most cases the production of the Technical File will not represent an additional burden on manufacturers as the need to produce this was an integral part of the previous HA approval process.

The TOPAS Registration process still relies on the manufacturer self-certifying that the appropriate TOPAS specifications have been complied with, but critically also involves an independent review of the Product Technical File to increase confidence that the equipment complies with specification requirements. This is actually more rigorous than the HA self-certification process which TOPAS registration replaces and should therefore increase confidence that Registered products do actually meet the requirements of the relevant specifications.

### Product registration - overview

The TOPAS Registration process is detailed in TOPAS 0600A, which replaces the HA document TRG 0600A. In many respects TOPAS Registration is intentionally very similar to the original HA approval process, except for the requirement for Manufacturers to have their Technical File independently assessed against requirements set out in each TOPAS specification.

In summary:-

- A manufacturer undertakes product design and testing using a properly documented engineering process.
- At the completion of the design and testing process the manufacturer submits a completed product Technical File to an appropriate Notified Body, who will verify that the content of the Technical File meets the requirements of the TOPAS Product Specification against which the product is to be Registered.
- The Notified Body will issue a Certificate of Compliance to the manufacturer.
- The manufacturer submits the Certificate of Compliance, along with the registration fee (see later) to TOPAS.
- TOPAS will review the Certificate of Compliance and if all is in order will add the product to the TOPAS Register and notify the manufacturer. On successful completion of the registration process TOPAS will also issue a Registration Certificate, which may be used by the manufacturer to demonstrate that the product is TOPAS registered.

The TOPAS Register will also be freely available on line at [www.topasgroup.org.uk](http://www.topasgroup.org.uk) so prospective purchasers (and other interested parties) can easily confirm the Registration status

of any product covered by the TOPAS Registration process. In addition to the basic process TOPAS 0600A contains provision for dealing with changes to products during their lifetime, as well as product obsolescence and changes of ownership.

Of course it would be unreasonable to require Manufacturers to expend significant effort in registering products with TOPAS which already have HA Type Approval to a current version of a given HA specification. However, as Local Authority purchasing contracts requiring TOPAS Registration become more common, such products will need to be Registered to allow Manufacturers to be compliant with these contracts.

To facilitate this TOPAS 0600A offers an easy mechanism for existing HA Type Approved products to be added to the TOPAS Register. A manufacturer must simply provide a list of the relevant products using a standard form provided in TOPAS 0600A, along with a copy of the HA Type Approval letter or certificate for each product being Registered. (There will be no charge for the registration of existing HA approved products).

## **TOPAS specifications**

TOPAS will shortly take ownership of about 24 existing HA specifications, mainly the TR25XX range, which defines the performance requirements for the majority of traffic control and monitoring equipment in general use. Within TOPAS the existing specification numbering scheme will be retained to facilitate easy recognition, so TR2500 will become TOPAS 2500 and so on. As part of the re-numbering process some changes to the preamble to each specification will be made, removing references to Type Approval for example and an appendix will be added in each case to define the content of the Technical File, which will be used by the independent Notified Body to assess compliance with the specification.

The HA will retain ownership of those specifications which they would directly use for purchasing specific equipment, for example, Motorway signs or the MIDAS system and all its components.

The current list of specifications to be transferred to TOPAS is shown in Appendix A.

In preparation for the transfer of ownership the HA is currently engaged in a final review and update of many of the specifications which are to be transferred and this will create new versions, ready to be re-numbered and published by TOPAS. This activity will help immensely going forward as it will relieve TOPAS of the considerable burden of major specification updates very soon after taking ownership. However, because some of the specification changes are material, in that they potentially alter detailed functionality, it does create a major short term issue and compromises the intention to allow products which are currently HA Type Approved, to an existing specification version, to be simply Registered by TOPAS.

To overcome this TOPAS will initially use the current published versions of the specifications as the basis for the TOPAS versions – so TR2500A and TOPAS 2500A will truly be completely compatible with one another, with no room for ambiguity or confusion about the functionality being offered by a TOPAS registered item of equipment.

Once the transfers have all been completed and TOPAS has full ownership the specifications will be gradually migrated to the new versions created by the HA. It is very important to note that TOPAS is intended to be an open organisation so changes to specifications may be proposed by users or industry and the process of consultation currently used by the HA will continue under TOPAS.

## **The TOPAS Management Group and funding**

TOPAS has been set up as a not for profit limited company (TOPAS Ltd) and has one nominated director. Its detailed structure and Terms of Reference are currently being finalised and will be posted on the organisations website ([www.topasgroup.org.uk](http://www.topasgroup.org.uk)) once this has been accomplished.

The overall supervision of the organisations rests with the TOPAS Management Group, which is responsible for operation of the organisation and if necessary for making final decisions on specification updates or the addition of new specifications to the portfolio. (It is anticipated that the day to day running of the organisation will be dealt with by a paid administrator – membership of the Management Group is an unpaid role!).

In setting up TOPAS all parties, Local Government, Industry and Central Government in the guise of the DfT, have been very mindful of the need for the organisation to be open and not to be dominated by one set of interests. To achieve this balance the organisation is constituted as triumvirate, with equal representation from these three main parties. Each Party is responsible for nominating four members to sit on the Management Group and it is up to them individually to decide how such nominations are made. The Chairman of the Management Group will rotate annually around the three parties and for the first year it will be held by Dr Mark Pleydell on behalf of ARTSM.

Obviously the setting up of such an organisation could not be undertaken without a source of initial funding and this has been provided by the DfT, ADEPT and ARTSM.

Because much of the work undertaken by TOPAS, particularly around specification reviews and updates will be undertaken by volunteers, it is anticipated that the annual running costs for the organisation will be modest, around £20,000 per year. There will no ongoing funding from Central Government so the organisation has to secure a constant revenue stream to meet its expenses and this will come from the fee charged to Manufacturers for Registering their products. Initially the fee will be set at £1000, but may decrease (or increase) in time depending on the actual running costs incurred by the organisation and the number of registrations experienced each year.

Manufacturers will also need to cover the costs of having their Technical File reviewed by an appropriate Nominated Body so TOPAS registration will act to increase Manufacturers overall development costs slightly. However the increase is small when considered alongside the total design and verification costs which are often incurred bringing a new product to the market and the benefit of having products which are Registered and being specified by Local Authority purchasing organisations should outweigh the slight cost increase.

## **Acknowledgments**

The creation of TOPAS Ltd has involved considerable work from a wide range of people in addition to the Authors of this paper. Whilst it's not possible to individually name everybody the Authors would like to particularly note the contribution of Dr Mark Pleydell, Brian Lyus, Dave Cousins, Mike Nicholls, Mark Cracknell, Ben Catchesides and Suku Phull.

## Appendix A – TOPAS Specification List

Title	HA Reference	Issue	Date	TOPAS reference
Specification for Traffic Signal Controller	TR2500	A	01/11/2005	TOPAS 2500A
Performance Specification for Portable Traffic Signal Control Equipment for use at Roadworks	TR2502	B	01/03/2011	TOPAS 2502B
Performance Specification for Pedestrian Facilities at Temporary Standalone Traffic Signals	TR2503	B	01/02/2006	TOPAS 2503B
Performance Specification for Vehicle Detection Equipment for Vehicle Actuated Portable Traffic Signals	TR2504	A	01/05/2005	TOPAS 2504A
Performance Specification for Above Ground Vehicle Detector Systems for use at Permanent Traffic Signal Installations	TR2505	A	01/05/2005	TOPAS 2505A
Performance Specification for Above Ground On-Crossing Pedestrian Detection Systems	TR2506	A	01/05/2005	TOPAS 2506A
Performance Specification for Kerbside Detection Systems for use with Nearside Signals and Demand Units	TR2507	A	01/05/2005	TOPAS 2507A
Performance Specification For Tactile Equipment for use at Pedestrian Crossings	TR2508	A	01/07/2005	TOPAS 2508A
Performance Specification for Audible Equipment for use at Pedestrian Crossings	TR2509	A	01/07/2005	TOPAS 2509A
Performance Specification for Rising Bollards Control Systems	TR2510	A	01/07/2005	TOPAS 2510A
Performance Specification for Nearside Signal and Demand Unit	TR2511	A	01/07/2005	TOPAS 2511A
Performance Specification for Below Ground Vehicle Detection Equipment	TR2512	A	01/09/2005	TOPAS 2512A
Performance Specification for Wig Wag Signal Control Equipment	TR2513	A	01/09/2005	TOPAS 2513A
Performance Specification for Light Control of Tramcars	TR2514	A	01/09/2005	TOPAS 2514A
Performance Specification for Equipment to Detect High and Overheight Vehicles at Low Structures	TR2515	A	01/09/2005	TOPAS 2515A
Performance Specification for Discontinuous Variable Message Signs	TR2516	B	01/09/2006	TOPAS 2516B
Performance Specification for Electromechanical Variable Message Signs	TR2517	A	01/10/2005	TOPAS 2517A
Performance Specification for Uni-directional Logic Equipment	TR2520	A	01/10/2005	TOPAS 2520A
Remote Monitoring and Control of Traffic Control Equipment via a Telecommunications Network	TR2522	A	01/10/2005	TOPAS 2522A
Traffic Control Equipment Interfacing Specification	TR2523	A	01/09/2005	TOPAS 2523A
Performance Specification for Portable Traffic Signal Control Equipment with Pedestrian Facilities for use at Roadworks	TR2537	A	01/03/2011	TOPAS 2537A
Performance Specification for Portable Traffic Signal Control Equipment for a Stand-alone Pedestrian Facility	TR2538	A	01/03/2011	TOPAS 2538A
Performance Specification for Pedestrian Countdown Units for use at Traffic Signals	TR2581	A	01/08/2011	TOPAS 2581A
Self-Certification Procedures for Statutory Approval of Traffic Control Equipment	TRG0600	A	01/05/2005	TOPAS 0600A