Unlocking the Next Stage – JCT 2026

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Glossary

Term	Description
C-ITS	Co-operative Intelligent Transport Systems
DRn	Demand Reply, reply bit which indicates local demand for a stage.
Gn	Notation for the stage reply from the controller. Numbered to match the stage configuration. G1, G2, G3. This stage reply is set when all phases in the stage are green.
GLOSA	Green Light Optimal Speed Advisory
Local	Traffic signals that are not controlled by the UTC system
MIB	Management Information Base, is a hierarchical database that contains configuration and other vital management information of SNMP devices in the form of data objects
NXTSTG	Next Stage parameter in controllers
SPaT	Signal Phase and Timing
UTC	Urban Traffic Control
UTMC	Urban Traffic Management and Control standard for communication.

Executive Summary

This paper is intended to open the dialogue regarding the applications of Next Stage information and work towards a multi-stakeholder consensus on its future use.

The ‘Next Stage’ study addresses a long-standing limitation within UK traffic signal control systems: the inability to accurately identify the next running stage until the controller returns a stage confirmation reply (Gn). This creates a period of uncertainty during interstage, particularly where demand-dependent stages are configured, which reduces the ability of Urban Traffic Control (UTC) systems and traffic signal optimisers to accurately model junction behaviour and make forward-looking optimisation decisions.

This paper presents a pilot study undertaken by Transport for London (TfL) to investigate whether existing traffic signal controller functionality can be used to provide advance indication of the next stage before stage confirmation occurs. The study focused on using the controller's internal Next Stage (NXTSTG) parameter, which reports the stage the controller is moving towards during interstage. By trialling the transmission of this information through existing controller functionality and standard communications infrastructure, it was possible to make upcoming stage information available within a UTC instation without additional hardware and with only minimal controller software configuration changes.

By providing real-time visibility of the controller's intended stage transition, traffic optimisers could accurately reflect the true running sequence rather than relying on retrospective correction following stage confirmation. By providing real-time visibility of the controller's intended stage transition, traffic optimisers could accurately reflect the true running sequence rather than relying on retrospective correction following stage confirmation. The findings suggest that access to Next Stage information could:

- Enhance traffic signal optimisation
- Improve the modelling of demand-dependent stage operation
- Support more accurate Signal Phase and Timing (SPaT) messages for connected vehicle applications

- Improve plan-compliance monitoring
- Provide additional operational insight into controller behaviour.

The paper proposes further industry collaboration to explore standardisation through UTMC and the wider adoption of Next Stage data within future traffic management and optimisation systems.

Background

In the UK, traffic signal controllers typically only confirm the appearance of a demand dependent stage once the stage reply bit is returned. This delay of information is one of the major drawbacks of optimising for demand dependent stages, and most solutions available currently rely of expensive hardware upgrades or the presence of DRn reply bits configured on the bit pattern. This pilot study explored how existing controller capability could be used to make upcoming demand dependent stage information visible *before* the stage transition is completed.

This idea was triggered when comparing the data available to traffic signal optimisers in the UK with Europe. As part of C-ITS there are examples on the continent of controllers that use the integral next stage data to set the planned stage transitions within the locally operated optimiser.

The 'Next Stage' information is achieved by monitoring the stage that the traffic signal controller is moving towards during the interstage period. What makes this novel approach particularly appealing is that it exploits existing controller capability and transmits the data to the UTC system with only minimal controller software modification and, more importantly, no additional hardware.

Unlocking the next stage

Description

This pilot study used standard UK controller configuration using the UTMC standard.

It is well established that in UTC systems across the UK, the controller outputs a Gn bit to confirm the running stage. When a controller starts a move to the next stage, the Gn reply is stopped, and the period is marked as an 'interstage'. The instation is in limbo until the next stage Gn reply is returned. Where there are only force stages, the stage sequence information can be inferred easily, but when demand dependent stages are configured there is an element of uncertainty. This Next Stage idea is borne out of filling this gap, looking into whether there is a way to communicate information from the controller about which stage the controller is moving to next, during the interstage.

Every controller has a manual panel; a set of switches that can be used to manually direct the sequence of stages on street. On the manual panel the current running stage is indicated with a steady light and during the interstage the upcoming stage is shown by a flashing light. This was the first indication that the 'next stage' information is already known by the controller.

Scope

The project has the following aims:

1. Conduct a desktop study to explore possible configuration options
2. Establish if it is possible to get a reply from the controller to the instation containing the next stage information.
3. Verify if the next stage information identifies the upcoming stage accurately
4. Compare the accuracy of the data to established methods.
5. Explore possible routes to include this data within the industry standards so that it can be used to inform the UTC systems and traffic signal optimisers to meet the use cases described in the possible applications.

Desktop Study

This section compares the accuracy and configuration requirements of the options available to identify the next stage within a traffic system instation.

1. Using Gn reply bit (for Local control applications).

Where a site is not under UTC control, the next running stage in the controller is not known until the controller replies to the instation with the Gn stage reply bit for the next stage. The wait for the stage reply confirmation is variable and is dependent on the duration of the intergreens and the sequence of stages configured in the controller.

2. Using output plan and Gn stage confirmation reply bit.

Under computer control the plan dictates the stage order. In a simple plan the next stage can be predicted as the controller follows rules-based behaviour in response to the UTC control request. The following scenarios need to be considered:

1. Where a site is under UTC control and there is a single force stage is requested, the next stage can be inferred to be the requested control stage.
2. Where a site is under UTC control and there are multiple next running stages offered to the controller (i.e. a demand dependent stage and an alternate stage) it can be assumed that the next running stage in the controller will be one of the stages offered. It is not possible to know which of the multiple stage options will occur on street until the Gn stage reply confirmation is returned after the intergreen period.
3. Where configured, ‘via’ moves imposed on the controller would need to be included in the prediction.

3. Using output plan, Gn stage confirmation reply bit and DRn.

At a controller, the Demand Reply (DRn) is a reply bit configured to be active/on when a local demand is registered on street via a pushbutton or vehicle demand. The DRn reply state switches off when the phase that the demand is green in runs on street.

Where available, it is technically possible to improve the use of a plan and Gn stage confirmation to using the demand reply. Theoretically it could be used to calculate the expected next stage for the controller using this record of a locally registered demand. The process involves combining two sources of information, the presence or absence of

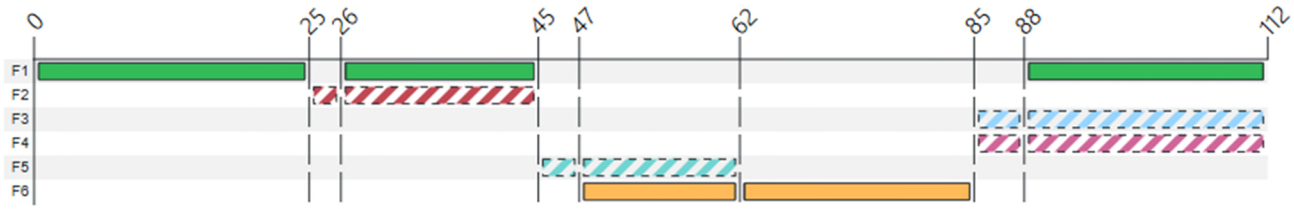
DRn and the output traffic stages in the UTC plan and processing them alongside the controller rules-base behaviour to identify the stage the controller will move towards.

In practice this has not been explored in detail due to the limited implementation of DRn bits across the London controllers and the complexity of using multiple sources to calculate the states of the controller.

4. Using next stage output from the controller

Using the controller derived Next Stage to inform which stage will follow can be achieved regardless of whether the controller is under Local or UTC control. The next stage that the controller is moving to is known at the start of the interstage, without the need to process the signal control plan. The methods previously discussed cannot handle plans with multiple consecutive demand dependent stages; the next stage output from the controller is unambiguous.

Consider the complex plan below:



CY112 F1 0, F2 25, F1F2 26, F5 45, F5F6 47, F6 62, F3F4 85, F1F3F4 88

There are eight combinations of stage order which are listed out below:

i. 1 – 6 – 3 – 1
ii. 1 – 6 – 4 – 1
iii. 1 – 5 – 6 – 3 – 1
iv. 1 – 5 – 6 – 4 – 1
v. 1 – 2 – 6 – 3 – 1
vi. 1 – 2 – 6 – 4 – 1
vii. 1 – 2 – 5 – 6 – 3 – 1
viii. 1 – 2 – 5 – 6 – 4 – 1

This plan has examples of the three most common types of demand dependent stage (highlighted in red) in the TfL UTC system:

1. Hold on previous stage

CY112 F1 0, **F2 25, F1F2 26**, F5 45, F5F6 47, F6 62, F3F4 85, F1F3F4 88

In this scenario it can be assumed that the controller is staying in the current stage if the controller has not moved away from the current (previous) stage within 3 seconds.

2. Move to next stage:

    CY112 F1 0, F2 25, F1F2 26, **F5 45, F5F6 47**, F6 62, F3F4 85, F1F3F4 88

In this scenario the controller will move away from the current stage and towards either of the stages offered. The stage which the controller is moving to is unknown until the shortest intergreen expires and the stage Gn reply is received by the instation.

3. Either or stage move

    CY112 F1 0, F2 25, F1F2 26, F5 45, F5F6 47, F6 62, **F3F4 85, F1F3F4 88**

In this scenario, two stages are offered at the same time with the Gn bit replying for the stage that had demand, if neither stage has demand it moves to the next force stage and G1 will reply. The stage which the controller is moving to is unknown until the shortest intergreen expires and of the stage Gn replies is received by the instation.

Controller Configuration Study

The primary aim of this project is to prove that it is possible to bring information back from the controller to the instation to indicate the next stage that the controller is moving to. This next stage will inform the instation of the upcoming stage during interstage, ahead of the next Gn stage confirmation reply.

TfL Operational Control – Traffic Systems and TfL Engineering collaborated to initiate a trial of setup on street to pilot the idea of returning Next Stage data from the controller in a binary format.

The trial aimed to answer the following questions:

1. Which controller types can generate next stage information?
2. When the next stage reply starts and ends?
3. Whether it is possible to collect 'all red' stage 0 information?
4. How to indicate a null state?

Method

London uses many different controller types across its network. To ensure the trial was as representative as possible, two trial sites were selected using the most common controllers used:

1. J01/126 – Optima
2. J03/046 – ST900

The setup involved a new controller PROM with special conditioning configured (included in the appendix) and OTU configuration to add four reply bits. There were no firmware, hardware or wiring changes required with these controller types.

To make use of currently available reply bits this study used four Remote Request reply bits configured to carry the data. The number ID for the next stage where the controller is moving was be represented in binary format. By using four reply bits it was possible to track 14 possible move to stages in addition to all red stage 0 and fault conditions / resting states.

Below is the Binary lookup table used in study:

Next Stage, (where the controller is moving to)	Binary bit reply
Controller in all red, Stage 0	0000
Next stage G1	0001
Next stage G2	0010
Next stage G3	0011
Next stage G4	0100
Next stage G5	0101
Next stage G6	0110
Next stage G7	0111
Next stage G8	1000
Next stage G9	1001
Next stage G10	1010
Next stage G11	1011
Next stage G12	1100
Next stage G13	1101
Next stage G14	1110
No current interstage, controller is in stage	1111
Signals off (manual panel or critical fault)	1111
OTU disconnected	1111

Results

Two trial sites setup

There was no change to the control behaviour of the site, so the trial in the live environment was possible without impacting the operation of the sites.

Trial site 1: **01/126** – Optima controller. Four remote request replies added to the reply line and configured using the special conditioning included in Appendix 1.

Trial Site 2: **03/046** - Yunex ST900 controller with a serially connected Stratos OTU. All the 32 reply bits were already in use at this site, so special conditioning bits ESPTXn in IC4 were used: specifically, 2SCRT0 - 3 bits (Scratch Bits). Full details are included in Appendix 2.

The following sections discuss the main outcomes of the trial:

1. Which controller types can generate this next stage information?

The desktop study of controller handbooks along with checks carried out on the controller hardware identified a suitable parameter.

There are two controller manufacturers commonly used in London, Telent Optima and Yunex models ST400-ST950.

The Telent Optima and all Yunex controllers generate a next stage (NXTSTG) as read only value which reports the stage that the controller is moving to.

Next Stage parameter in Telent Optima:

NXTSTG - (stream).(stage)

Next Stage parameter in Yunex controllers (ST400 – ST950):

NXTSTG? (? = stream number0-7)

2. When does the next stage reply start and end?

Data generated at the trial sites has shown that the NXTSTG parameter is only active during the interstage. When the controller leaves a Gn stage the NXTSTG reply is returned immediately. The reply is active until the next Gn stage is active.

This NXTSTG reply occurs for all modes of controller operation, under UTC control or a Local control.

Time	G1	G2	G3	G4	RQ	RQ	RQ	RQ	
09:00:03	1	•	•	•	1	1	1	1	No current interstage, null
09:00:04	•	•	•	•	•	1	•	•	Next stage, G2
09:00:11	•	•	•	•	•	1	•	•	
09:00:12	•	2	•	•	1	1	1	1	No current interstage, null
09:00:21	•	2	•	•	1	1	1	1	
09:00:22	•	•	•	•	1	1	•	•	Next stage, G3
09:00:39	•	•	•	•	1	1	•	•	
09:00:40	•	•	3	•	1	1	1	1	No current interstage, null
09:00:44	•	•	3	•	1	1	1	1	
09:00:46	•	•	•	•	•	•	1	•	Next stage, G4
09:00:54	•	•	•	•	•	•	1	•	
09:00:55	•	•	•	4	1	1	1	1	No current interstage, null
09:01:35	•	•	•	4	1	1	1	1	
09:01:36	•	•	•	•	1	•	•	•	Next stage, G1
09:01:47	•	•	•	•	1	•	•	•	
09:01:49	1	•	•	•	1	1	1	1	No current interstage, null
09:01:55	1	•	•	•	1	1	1	1	

Table 1 Example of reply stages and associated Next Stage output from a controller in London. Note; the binary reply is reversed.

3. How is a null state indicated?

A null state is returned when the controller is not in interstage or all-red. The NXTSTG returns a value of 1111 when it enters the null state. To make it clear that the interstage has ended, the null state is replied when the next Gn stage became green. This conditioning was configured in order to allow for greater scope for potential applications.

4. Is it possible to collect all-red / Stage 0 information?

When a controller is in the 'all red' / stage 0, the standard conditioning is for the replies to behave like a long interstage. To distinguish whether the controller is in interstage or all-red, the NXTSTG reply has been expanded to have a unique reply '0000' for the all-red stage. This reply state will persist until the controller starts making the move to the next stage where the NXTSTG reply will indicate where the controller is moving to.

Applications

Below are four potential applications that could make use of the Next Stage data from the controller.

1. Traffic signal optimiser demand dependency modelling

The duration of a green stage can vary depending on the stage order due to preceding interstage or associated phase delays. Currently, traffic signal optimisers in the UK pause the modelling of queued vehicles discharging from the link whilst the junction controller is in interstage because of the absence of Gn stage reply.

If all stages are force stage order the next stage is known and the optimiser can operate using all information. When demand dependent stages are present, this interstage information cannot be acted on until the Gn new stage reply is received.

If the next stage is known, then the optimiser can be more intelligent in the way it allocates green time. The search space for future optimisations is also reduced as it only considers the stage order that is in progress rather than potential options.

2. Connected Vehicles, information relating to next stage:

There is a gap in available stage information during the interstage when SPaT is based only on stage Gn reply. In 2019, a trial in London looked at how demand reply bits could increase the accuracy of the Signal Phase and Timing (SPaT) prediction for the Green Light Optimal Speed Advisory (GLOSA) information distributed to Connected Vehicles. Due to the complexities in decoding the plan structure the trial was not able to utilise the demand reply to patch the data.

There is a possibility that the Next Stage information could support this SPaT type data generated from stage replies. Knowing the next stage alongside the standard stage replies removes the unpredictability of which stage the controller is moving to next, and when the stage will be starting.

3. Monitoring VA control (overnight) and alternate movements under UTC:

The trial demonstrated that an all-red state could be indicated in the NXTSTG reply. This opens up a way to monitor from a traffic instation whether a controller is resting in an all-red stage. This detailed information is not currently available, but would add to the troubleshooting toolkit available to those monitoring asset faults.

4. Plan compliance alarms monitoring:

The information sent by a controller about the current running stage is limited to Gn reply bits. When a controller is moving to a new stage, the UTC system sees absence of Gn reply. The UTC system and optimiser do not know which stage the controller is moving to.

- If a controller is moving to a stage that was not requested by the UTC plan, this is not known until the Gn reply is received.
- Where there are multiple routes through a plan the expected interstage value is not known until the Gn reply is received.

The reason for the controller leaving the current stage and moving to an interstage can sometimes be derived from the plan output to the controller when the controller is under UTC control. However, if the controller is offered a demand dependent stage and an alternative the next stage is unknown until the stage reply is received.

Knowing the next stage could enhance the alarms monitoring by:

- Providing extra information to include in plan compliance checks
- Giving an early indication of invalid stage transition

Further project development

This section outlines some ideas for further trials or studies:

1) As an upgrade to the trial using binary data, with industry buy in, propose the inclusion of this ‘next stage’ as a UTMC object to supply this information to a traffic instation.
    - Investigation into whether there is an existing UTMC object that can carry this data. A further action to define a UTMC object that can be included in the standard for manufacturers to accommodate within the design.
    - It is expected that this would require firmware changes to either the UTMC compliant outstation or by providing additional functionality for the controller firmware (within the ST950 for example) to have the ability to map directly to a UTMC object rather than through the controller I/O.

2) Development of instation capabilities to take advantage of this controller information.
    - Discussion with traffic system suppliers to invest in development to ingest and interpret this data as interstage to meet the use cases described.

Conclusion

This paper is intended to open the dialogue regarding the applications of Next Stage information and seek multi-stakeholder consensus.

This study has demonstrated that reliable Next Stage information already exists within UK traffic signal controllers. This information can be made available to UTC systems using existing controller functionality and communications infrastructure without the need for additional hardware. The Next Stage, NXTSTG, parameter accurately identifies the stage a controller is moving toward during interstage, when the controller is operating under Local or UTC control.

The study demonstrates the advantage of obtaining direct next stage information to supply real time controller activity. This is a step forwards from inferring stage transitions through complex analysis of UTC plans, demand-dependent logic, or demand reply bits. This is particularly valuable for junctions containing demand-dependent stages, where ambiguity currently exists until the next stage confirmation reply is received.

The results indicate that Next Stage information has the potential to improve traffic signal optimiser performance by reducing uncertainty during interstage, enabling earlier and more informed optimisation decisions. The data could also support emerging connected vehicle applications, enhance operational monitoring, strengthen plan-compliance alarms, and provide new visibility of all-red and transitional controller states that are not currently available within standard UTC systems.

The work therefore represents an opportunity to unlock previously inaccessible controller intelligence on the next stage. With the aim of enabling a reusable function for future traffic signal optimisation, monitoring, and connected vehicle services, the next step is for industry stakeholders, system suppliers, controller manufacturers to include Next Stage information within industry standards.

Appendix

1. Special conditioning used in the Optima specification:

RTO Next Stage Replies
=====================
4 additional UTC Reply bits report the Next Stage Move to RTO. NGS0, NGS1, NGS2 and NGS3

Changing to Stage	NGS3	NGS2	NGS1	NGS0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
Stage Running (except for stage 0)	1	1	1	1
Signals Off (Manual Panel or Critical Fault)	1	1	1	1
OTU Disconnected	1	1	1	1

Figure 1.1 Optima Special Conditioning Instructions

Statement 131				
Comments	RTO Next Stage - Controller shutdown, Manual Switch Off replies 0b1111			
If	MSDMODE-1	**Or**	SHDMODE-1	
Then	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTA-NSG2	OUTPUTA-NSG3

Statement 132				
Comments	RTO Next Stage - Change to Stage 0 and Incuding Stage 0			
If	NXTSTG-1.0	**Or**	CURSTG-1.0	**And not** STMNT-SIGSOFF
Then	OUTPUTN-NSG0	OUTPUTN-NSG1	OUTPUTN-NSG2	OUTPUTN-NSG3
Else	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTA-NSG2	OUTPUTA-NSG3

Statement 133				
Comments	RTO Next Stage - Change to Stage 1			
If	NXTSTG-1.1	**And not**	CURSTG-1.1	**And not** STMNT-SIGSOFF
Then	OUTPUTA-NSG0	OUTPUTN-NSG1	OUTPUTN-NSG2	OUTPUTN-NSG3
Else	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTA-NSG2	OUTPUTA-NSG3

Statement 134				
Comments	RTO Next Stage - Change to Stage 2			
If	NXTSTG-1.2	**And not**	CURSTG-1.2	**And not** STMNT-SIGSOFF
Then	OUTPUTN-NSG0	OUTPUTA-NSG1	OUTPUTN-NSG2	OUTPUTN-NSG3
Else	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTA-NSG2	OUTPUTA-NSG3

Statement 135				
Comments	RTO Next Stage - Change to Stage 3			
If	NXTSTG-1.3	**And not**	CURSTG-1.3	**And not** STMNT-SIGSOFF
Then	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTN-NSG2	OUTPUTN-NSG3
Else	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTA-NSG2	OUTPUTA-NSG3

Statement 136				
Comments	RTO Next Stage - Change to Stage 4			
If	NXTSTG-1.4	**And not**	CURSTG-1.4	**And not** STMNT-SIGSOFF
Then	OUTPUTN-NSG0	OUTPUTN-NSG1	OUTPUTA-NSG2	OUTPUTN-NSG3
Else	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTA-NSG2	OUTPUTA-NSG3

Statement 137				
Comments	RTO Next Stage - Change to Stage 5			
If	NXTSTG-1.5	**And not**	CURSTG-1.5	**And not** STMNT-SIGSOFF
Then	OUTPUTA-NSG0	OUTPUTN-NSG1	OUTPUTA-NSG2	OUTPUTN-NSG3
Else	OUTPUTA-NSG0	OUTPUTA-NSG1	OUTPUTA-NSG2	OUTPUTA-NSG3

Figure 2.2 Optima Special Conditioning

2. Special conditioning used in the ST900 specification:

```
; RTO Next Stage
; ==============
(NXTSTG0 EQL <1>) + (NXTSTG0 EQL <3>) + (NXTSTG0 EQL <5>) + (NXTSTG0 EQL <7>) = 2SCRT0
(NXTSTG0 EQL <9>) + (NXTSTG0 EQL <11>) + (NXTSTG0 EQL <13>) + (NXTSTG0 EQL <15>) = +2SCRT0
(NXTSTG0 EQL <2>) + (NXTSTG0 EQL <3>) + (NXTSTG0 EQL <6>) + (NXTSTG0 EQL <7>) = 2SCRT1
(NXTSTG0 EQL <10>) + (NXTSTG0 EQL <11>) + (NXTSTG0 EQL <14>) + (NXTSTG0 EQL <15>) = +2SCRT1
((NXTSTG0 GRT <3>)./(NXTSTG0 GRT <7>)) + (NXTSTG0 GRT <11>) = 2SCRT2
(NXTSTG0 GRT <7>) = 2SCRT3

; Stage Active Replies 0bllll
(STAGE1+STAGE2+STAGE3+STAGE4+STAGE5+STAGE6+STAGE7+STAGE8)        :::= +2SCRT0
                                                                  *= +2SCRT1
                                                                  *= +2SCRT2
                                                                  *= +2SCRT3

; Signals off replies 0bllll
/(LMPON.SWLMPS./FLF17) :::= +2SCRT0
                       *= +2SCRT1
                       *= +2SCRT2
                       *= +2SCRT3

; Pass Binary Reply via ESP to OTU
/2SCRT0 = ESPTX0
/2SCRT1 = ESPTX1
/2SCRT2 = ESPTX2
/2SCRT3 = ESPTX3
```

Figure 3 Yunex type controller special conditioning

3. UTMC Objects

UTMC objects register	https://img1.wsimg.com/blobby/go/95c7434a-9932-4705-a27f-9ee92d8138be/downloads/UTMC-TS004.006%20Objects%20-%20Main%20Mar10.pdf?ver=1732275471251
UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyGn	Condition 1 confirms that a particular stage, or phase if specified is running. G1 and G2 shall normally be returned simultaneously to indicate that one of the following has occurred: a) the mains supply to the signal aspects is off; b) manual method of traffic control is either in operation or requested; c) The traffic controller is switched off; d) The traffic controller has failed or shut down due to a fault; e) The interface between the OTU and the controller has been disconnected.
Example controller reply with Gn reply object highlighted in yellow.	get-response UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyDF.1.6.74.48.56.48.52.50 UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyRF1.1.6.74.48.56.48.52.50 UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyRF2.1.6.74.48.56.48.52.50 UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyCS.1.6.74.48.56.48.52.50 UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyGn.1.6.74.48.56.48.52.50 UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyGPn.1.6.74.48.56.48.52.50 UTMC-UTMCFULLUTCTYPE2-MIB::utcReplyVSn.1.4.88.54.56.48

4. Controller Behaviour Rules

There are six rules that govern UTC controller behaviour in the UK. This dictates how a controller will respond to a stage request, Fn, control bit. These are as follows:

a) Sending a new stage to a controller will cause it to move to that stage as long as a demand exists within the controller or the demand bit is sent with the stage.
b) The controller does not remember
c) Sending more than one new stage in an event to a controller will cause the controller to move to the first of those stages (in cyclic order) that has a demand. The controller will then remain in that stage until a different event is received.
d) If no demand exists for a new stage then the controller will remain where it is.
e) If more than one stage is sent to a controller and the controller is already in one of those stages then no move will occur.
f) Sending F bits to a controller will cause it to move into UTC mode. Withdrawing F bits for more than four seconds will cause the controller to drop out of UTC mode down to its next mode (CLF or VA for example).