Automatic Number Plate Recognition

Regulation 109

Supplier Specification

Version 2.2

Document Control

Version Control

Version	Date	Change	Author
0.1	01.03.2020	First draft	Trevor Longshaw
0.2	31.03.2020	Updated following Reg 109 WG review comments	Trevor Longshaw
0.3	06.04.2020	Symbols updated following DfT guidance	Trevor Longshaw
0.4	07.04.2020	Amendments following Bill Mandeville comment on remote monitoring / persons description symbol	Trevor Longshaw
0.5	07.04.2020	Content Page added	Trevor Longshaw
0.6	09.04.2020	Enhanced Person description requirements	Trevor Longshaw
0.7	14.04.2020	Changes to PNC enhancements following discussion with PNC Vehicles Group representative. Re-word purpose and scope, 'DRAFT' retained whilst awaiting DfT and PNC agreement. This version released to suppliers.	Trevor Longshaw
1.0	30.04.2020	Draft removed Design Principals agreed by DfT PNC requirements agreed by NPVPG Minor changes to 4.1.1 and 6.1.1 following supplier comment 3 additions to 4.7.4	Trevor Longshaw
2.0 draft	April 2021	• Section 1 and 2: Change to legal reference • Section 1: Introduction and scope of devices updated. • Background Information removed • Section 2: Intelligence update paragraph added • Section 3: MMC data truncated to fit symbol if necessary • Section 4: Warning Markers added to PNC and VOI sections *MUST BE INCLUDED IN NEXT SOFTWARE RELEASE • Section 4: Impersonates (IS) Warning Signal added * MUST BE INCLUDED IN NEXT SOFTWARE RELEASE • Section 4: Improved explanation of Warning Signal, Person Description and Warning Marker intelligence formatting • Section 4: Changes to No Insurance symbol display • Section 4: Addition of new Police Force collaborations / LEA identifiers *SHOULD BE INCLUDED IN NEXT RELEASE OF SOFTWARE	Trevor Longshaw (Following Regulation 109 Working Group meeting 21/04/2021)

Version	Date	Change	Author
		• Section 4: VOI Template guidance change to allowed warning signals on response VOI list (information only, policing change) • Section 4: Warning markers / MIDAS lists included in symbol colour chart • Para 4.1.7: Clarity on where PNC ACTion / LOS report information is retrieved from • Paras 4.6.1 and 4.14.1: Clarity on formatting of PNC and VOI intelligence which includes warning signals / person description / warning signals. • Paras 4.7.4 and 4.15.2: Use of TTS encouraged • Section 5: Update on camera location identification for remote alerting systems (For information – possible future change) • Section 6: Symbol priority updated to incorporate warning markers MUST BE INCLUDED IN NEXT RELEASE OF SOFTWARE • VOI Template: Intel Grading is now a mandatory field (information only, policing change) • VOI Template: Awareness of VOI spreadsheet Tool (information only, policing change) • Para 4.8.4: New organisations and VOI List names added to character mapping – SHOULD BE INCLUDED IN NEXT RELEASE OF SOFTWARE	
2.0 draft	April / May 2021	Document review	R109 Working Group
2.0	20/05/2021	Document Released	Trevor Longshaw
2.1	17/08/2021	• Section 5.1.1: Update to remote alerting symbols following legal review and NPCC approval. • Minor changes to grammar to improve flow of document • Document released	Trevor Longshaw
2.2	01/10/2021	• Standardised language used for 'Warning Signals' and 'Warning Markers' • Section 4.8.2 VOI template update: Number of allowable characters and formatting clarification aligned to NAS	Trevor Longshaw

Contents

1   Introduction

1.1   Purpose and Scope

To offer developers and suppliers of Automatic Number Plate Recognition (ANPR) software deployed in a mobile environment, a specification for a minimum viable product to meet the requirements of the Road Vehicles (Construction and Use) Regulations 1986 Regulation 109, as amended by a Vehicles Special Order (frequently referred to as Regulation 109) which came into force on the 1st November 2020.
This covers any ANPR system with a screen viewable by the driver, for example bespoke in-car system, tablet device, mobile phone, this will be referred to as an in-car system.

1.2   The overall aim of the document

1.2.1 To clearly define to suppliers of in-car ANPR software the minimum requirements to meet Regulation 109 (as amended by the Vehicle Special Order - VSO) whilst at the same time maintaining operational effectiveness and officer safety. Going forwards in this document this version of software will be referred to as 'Regulation 109 compliant'.

1.2.2   For policing to offer suppliers reassurance that processes are being reviewed to make sure intelligence (both PNC and Vehicles of Interest lists), which activate against ANPR systems, is fit for purpose, unambiguous and follows documented guidelines.

1.3   Delivery

The Vehicles Special Order (VSO) came into effect on the 1st November 2020, with version 1.0 of this specification ensuring all police forces deploying mobile ANPR solutions were in a position to achieve compliance. Version 2.0 of the specification builds upon the original specification to further enhance features to assist officers to safely carry out their duty. It is accepted that version 1.0 of the specification mandated requirement, any additions in version 2.0 and beyond will be optional, unless shown as mandated in next software release cycle due to operational necessity / officer safety.

2   Intelligence

2.1   PNC / VOI List content recap

Suppliers and policing highlighted several points following failed development and deployment of software to meet the 2019 VSO:

- The quality of intelligence to trigger symbol display was varied, making accurate and robust visual representation to support effective and safe policing almost impossible.

- The text length in some VOI lists was unnecessarily long and poorly presented making the use of Text to Speech (TTS) technology challenging, if not impossible.

- The PNC guidance manual and current VOI list template, contained with the NAS Technical Specification, were not strictly followed when creating reports. This

resulted in warning signals presented in various formats making word search and TTS inaccurate and compromising officer safety.

- The symbols could be more distracting than text when an officer is trying to decipher images inside symbols representing specific intelligence / warning types.

- The number of symbols required to display all warning signalss and offence types was more distracting than text, given the real estate available on small in car screens.

2.2 Policing Response recap

Review of the 2019 deployment confirmed comments were justified about quality of information, unstructured VOI content and non-compliant PNC warning s. The following is a policing workstream to address the problems:

- An updated VOI List Technical Specification template has been developed which:

  - o Simplifies and re-structures 'Reasons' codes for display in vehicles when Regulation 109 is in force
  - o Replaces warning signals with a simple 'No Warnings Known' or 'Warnings Present' option.
  - o The free text Information / Action field reduced to a maximum of 198 characters suitable for TTS, which mirrors PNC.
  - o A maximum of three warning signals entered as the first characters in the information / Action free text field using standard PNC abbreviations.
  - o Person description (not mandatory) to follow warning signals.
  - o Both warning signals and person description visible to driver below 7mph and available as TTS.
  - o An agreed VOI naming convention allowing the owning organisation to be displayed within a symbol.

- Due to the ongoing transition from PNC to the National Law Enforcement Data Service (NLEDS) driving any significant change to the PNC product presents challenges, however by engaging with the National PNC Vehicle and Property Working Group (NPVPG) the following has been agreed:

  - o Re-inforce to forces the need for quality of reports to be managed on creation to ensure compliance and consistency.
  - o The three highest priority warning signals will be entered at the beginning of the first line of the free text field; each in the acknowledged PNC abbreviated two-character format as described in 4.2.1 and separated by a space, with no additional symbols (asterisk etc.) to highlight the warnings.
  - o Person description to follow warning signals in agreed format shown in symbol in section 3.1.1
  - o An amendment to policy allowing lower level intelligence markers with warning signals to meet ACTion criteria, reducing the number of VOI list entries.
  - o Stress to police forces when creating ACTion markers the importance of correctly completing the 'Hazard' field. This is already a pre-populated field within PNC with 5 available options, so can be used to highlight warnings in regulation 109 mode.

2.3   April 2021 Update

To support the release of the 2020 Vehicle Special Order (VSO) policing made several changes to the guidance on development of both Vehicle of Interest and PNC ACTion intelligence reports, which was implemented through robust communication, changes to the NAS Technical Specification VOI Template and updates to the PNC ACTion guidance. This emphasised the importance of presenting correctly formatted intelligence to ensure the correct symbols were displayed in vehicle and text to speech applications had best chance of being operationally useful.

The transition to the new way of working with intelligence lists wasn't instant as some embedded processes required change and users needed to adjust, but in the 6 months since 'go-live' improvement has been significant.

It has recently been agreed that any intelligence list used for response purposes (i.e. viewable by an officer on a vehicle mounted system subject to Reg 109 compliance) must not include any warning signals which could compromise officer safety. With immediate effect Firearms (FI), Weapons (WE) and Violence (VI) warning signals will not be used in a VOI list, unless that list will not activate in-car systems. If the intelligence is to activate against in-car systems (whether that is local to the vehicle or through a remote alerting console) then it must be included on a PNC ACTion entry with the appropriate warning signals included. PNC ACTion guidance has been updated to support this and now allows lower level offences with officer safety warning signals to be included in an ACTion report.

To meet the change within this document the relevant sections in the PNC ACTion guidance and the NAS Technical Specification have been updated.

3   Design Detail

3.1   Design principles

3.1.1   The design principles for in-car ANPR systems provide effective mitigation of the risk arising from driver distraction when viewing information displayed within the vehicle.

Taking into account operational requirements and safety considerations, the principals allow LEA's using in-car ANPR systems to locate vehicles of interest to assist in the detection of crime, apprehending of criminals, protection of vulnerable people and making the roads safer. It will also enable the driver to validate the need for a safe response to that information.

3.1.2   The following information may be displayed to the driver whilst the vehicle is travelling above 7mph:

- An image of the vehicle (Overview image)

- An image of the number plate (Plate Patch)
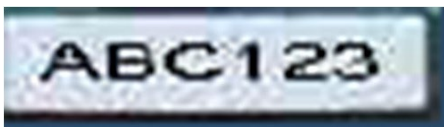
- The Vehicle Registration Mark (VRM) as interpreted by the ANPR system.

- Information identifying the on-board camera location and recorded nature of the vehicle to confirm 'read' accuracy and support visual identification of that vehicle (i.e. Make, Model, Colour; in the example a Blue VW Scirocco)

Supplier to truncate Make / Model description to fit symbol

- Detail relating to the source of information, operational priority and action to be taken against a vehicle matching against a list of vehicles of interest (PNC / VOI Lists) displayed by the use of symbols (Examples at 4.1.8 and 4.9.1)
- Information relating to any warnings and hazards associated with the vehicle of interest or occupants will be displayed by the use of symbols (Examples at 4.2.2, 4.3.1, 4.5.1 and 4.10.1)
- Information relating to the descriptions for any persons of interest associated with the ANPR 'read' displayed by the use of symbols (unless Text To Speech is deployed see section 4.7.2 and 4.15.1). The content of the symbol will follow the PNC guidance document:

Ethnicity displayed using the 6+1 PNC / PHOENIX visual identity code (IC):

CODE TO DISPLAY	ETHNICITY
IC1	White – North European
IC2	White – South European
IC3	Black
IC4	Asian

IC5	Chinese, Japanese or South East Asian
IC6	Middle Eastern
IC0	Unknown

A person's sex will be displayed as:

SEX	DISPLAY
Male	M
Female	F
Unknown	U

A person's age will be described as (for example):

25yrs (without space between numerical and alpha characters)

An example symbol would be:

The purpose of the above is to enable evaluation of the information associated with an ANPR 'read' to inform a decision whether a response to the information is appropriate, and the level of urgency applicable to any response is proportionate.

- Additional information relating to a vehicle circulation (PNC /VOI) may be presented using a 'text to speech (TTS)' engine which can be automated and then repeated by the operator using easily identified buttons.

All information associated with a vehicle of interest (PNC/VOI List) may be displayed such that it is visible to the driver on an in car digital display screen when the vehicle is travelling at 7mph and below.

Information may be displayed to the passenger of a vehicle without restriction, providing the screen has been adjusted so that the driver is unable to view the screen above 7mph. In the event of the driver inadvertently and momentarily being able to glance at the information being viewed by the passenger whilst performing normal driving actions is not deemed as a breach of the VSO.

4 PNC ACTion / Vehicle of Interest (VOI)

4.1 PNC ACTion Reports

4.1.1 PNC ACTion marker symbols (HIGH, LOS, MEDIUM, SIS, LOW and EXTRACT) will always be displayed as priority against local VOI list entries.

4.1.2 In the event of more than one ACTion marker being present, the highest priority will always be displayed:

- HIGH ACT
- LOS
- MEDIUM ACT
- SIS
- LOW ACT
- PNC EXTRACT ACT
- PNC EXTRACT LOS

4.1.3 ACTion markers will be depicted as an eight sided 'STOP' sign with:

- Red infill for High and LOS markers
- Red and Green infill for MEDIUM and SIS markers
- Green for LOW markers

4.1.4 Within the 'STOP' sign will be the letters H, M, L and LOS to identify the priority of the marker in the event of a poor colour display or an operator with colour vision deficiency to ensure there is absolutely no doubt about the priority of the marker. Bold text Arial font will be used.

4.1.5 Above the priority letter within the Octagon will be a single word to identify response (ACTION) to be taken:

- STOP
- MONITOR (High ACT only)
- ASSESS

4.1.6 Below the priority letter will be characters to identify the 'REASON' code:

- CRIME
- DETAILS
- DISQ
- DRUGS
- MISPER
- VISOR

4.1.7 The characters identifying whether an ACTion marker or LOS marker is displayed are located in different parts of the PNC report, the following should be considered when planning how to retrieve the relevant information from a PNC report:
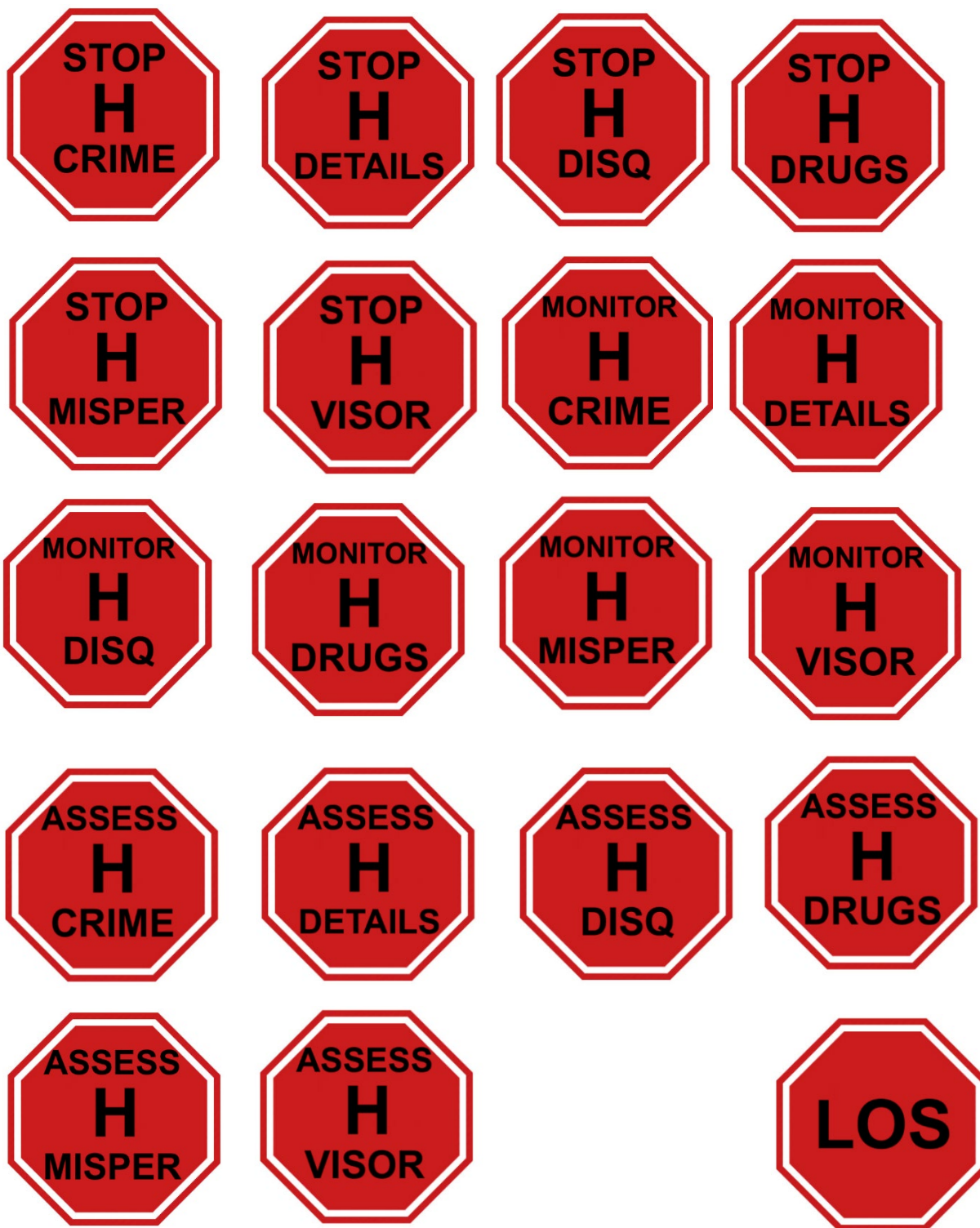
The three mandatory elements of an ACTion report (PRIORITY / ACTION / REASON) will always be presented on the first line of the vehicle report free text field (i.e. at the start of the first of three 66 character lines), this is automatically created by the PNC report template, with no user options. The first 'true' free text characters will align to this specification, namely a maximum of 3 x warning signals, person description and warning markers. For absolute clarity, although the first line of the free text field has an allowable number of 66 characters, in reality some of those characters will be used by the automated P / A / R elements, of which all permutations are identified in section 4.1.8

LOS and SIS markers use a different PNC input template which puts the character LOS or SIS in the 'Report Type' field. The inputter will have the option to include the characters (LOS / SIS) in the free text field but this has not been mandated in the PNC

Manual or guidance. It is therefore essential that the information required to display the correct LOS / SIS symbol is retrieved from the 'Report Type' field.

4.1.8   From a single symbol the driver can now identify the type of alert, priority, action and reason:

HIGH ACTion

STOP H CRIME	STOP H DETAILS	STOP H DISQ	STOP H DRUGS
STOP H MISPER	STOP H VISOR	MONITOR H CRIME	MONITOR H DETAILS
MONITOR H DISQ	MONITOR H DRUGS	MONITOR H MISPER	MONITOR H VISOR
ASSESS H CRIME	ASSESS H DETAILS	ASSESS H DISQ	ASSESS H DRUGS
ASSESS H MISPER	ASSESS H VISOR		LOS

MEDIUM ACTion

STOP M CRIME

STOP M DETAILS

STOP M DISQ

STOP M DRUGS

STOP M MISPER

STOP M VISOR

ASSESS M CRIME

ASSESS M DETAILS

ASSESS M DISQ

ASSESS M DRUGS

ASSESS M MISPER

ASSESS M VISOR

SIS

LOW ACTion

STOP L CRIME

STOP L DETAILS

STOP L DISQ

STOP L DRUGS

STOP L VISOR   STOP L MISPER   ASSESS L CRIME   ASSESS L DETAILS

ASSESS L DISQ   ASSESS L DRUGS   ASSESS L MISPER   ASSESS L VISOR

PNC Extract

PNC EXTRACT ACT

PNC EXTRACT LOS

4.1.9 *It is acknowledged that some of the combinations of ACTion marker 'Priority, Action and Reason' combinations should never occur, however to ensure markers created in error are never missed all combinations listed should be available to display in the library of symbols for Regulation 109 compliance. The purpose of this is not to promote unprofessional practice, but to ensure an important marker is not missed due to human error. A parallel workstream will focus on operator education to minimise the probability of this ever happening.*

4.1.10 In the event of a PNC Extract symbol being displayed, and subsequently a PNC FastTrack ACT marker response arrives into the system, rather than displaying both Extract and ACT symbols it is preferable (although not mandated) for the Extract symbol to be removed from the display (i.e. over-written by the appropriate ACT symbol) to de-clutter the display.

4.2 PNC ACTion Warning Signals

4.2.1 The top three warning signals from **any** of the ACTion markers will be displayed as symbols. A maximum of 3 warning symbols will be displayed.

The three highest priority warning signals will be entered at the beginning of the first line of the 'free text' field (see 4.1.7 and 4.6.1); each in the acknowledged PNC abbreviated two-character format as described below and separated by a space, for example; FI WE VI

The priority order and abbreviation of the warnings is as follows:

1. **FI** - **Firearms**
2. **WE** - **Weapons**
3. **VI** - **Violent**
4. **ES** - **Escaper**
5. **MN** - **Mental Health**
6. **XP** - **Explosives**
7. **AG** - **Alleges**
8. **CO** - **Contagious**
9. **AT** - **Ailment**
10. **SU** - **Suicidal**
11. **SH** - **Self Harm**
12. **CL** - **Conceals**
13. **DR** - **Drugs**
14. **IS** - **Impersonates****

 **Impersonates is a recent addition to PNC Warning signals and is to be included as a displayable symbol. This change must be included in the next software release delivered within a reasonable timeframe.

4.2.2   PNC warning signals will be identified by a red triangle with white background and recognised two-letter PNC abbreviation in bold text using Arial font. This will allow the driver to quickly and clearly see warning signals contained within the information:
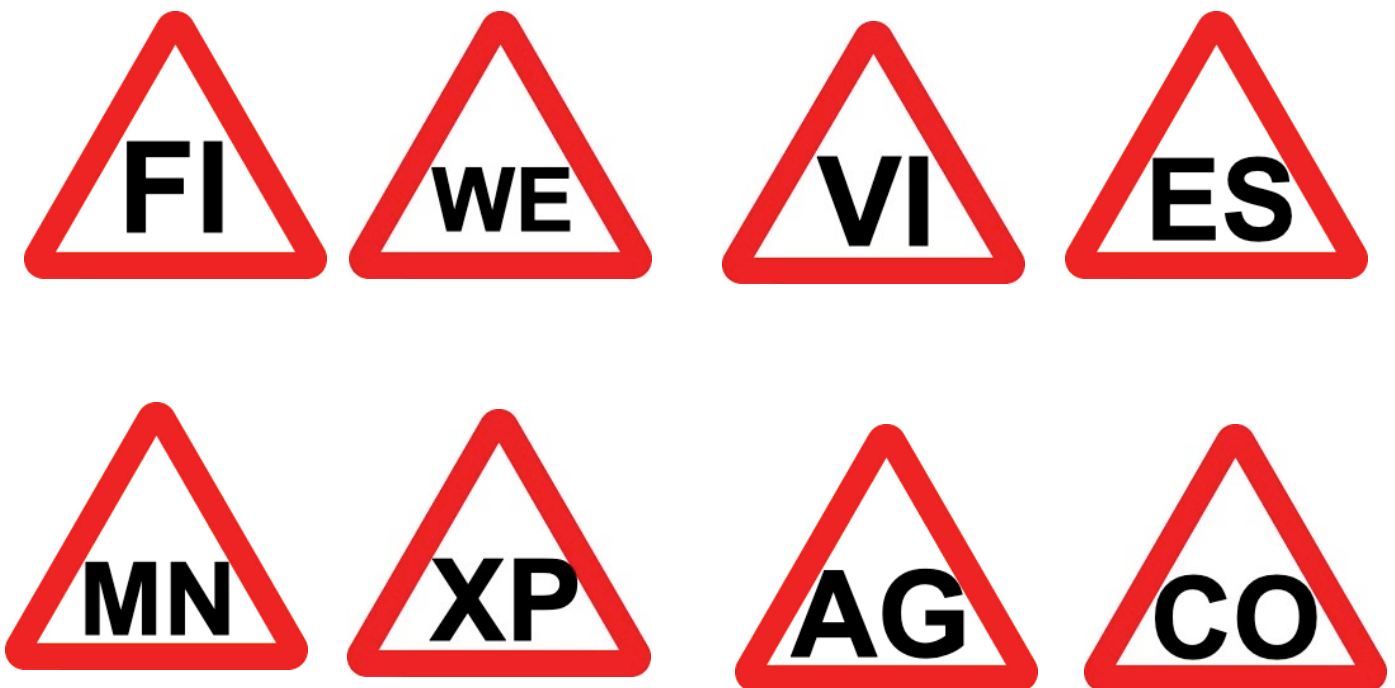
4.3 PNC ACTion Hazard Markings

4.3.1 Each PNC ACTion marker can have any one of 5 hazard warnings linked to it, appropriate to the intelligence available:

- **CHEMICAL**
- **EXPLOSIVES**
- **OCCUPANTS POTENTIALLY DANGEROUS**
- **RADIATION**
- **WEAPONS**

By highlighting the existence of hazards to the driver re-enforces any danger. If a hazard is present then there is no need to identify the type of hazard, simply the fact that it exists is sufficient which is achieved by either displaying a hazards sign;

or by highlighting an area of the on screen display in orange, either method will draw the drivers eye to the danger.

4.4 PNC ACTion Person Description

4.4.1 A person description will be in the format outlined in section 3.1.1. The description will be included in the first line of the information 'free text' field (see 4.1.7, 4.6.1) and will follow

the final warning signal if present. Each element of the description is to be separated by a space, for example; FI WE VI IC1 M 25yrs. It is possible for all elements of a person description to not be included (for example age may not form part of the description), in which case display only the available elements.

4.5   PNC ACTion Warning Markers

4.5.1   Certain information, which is absolutely crucial to how an officer responds to an incident, doesn't always fall into the normal category of Warning Signals (which is covered in sections 4.2.1 and 4.10.1) but is just as important for both officer and public safety, this is identified as a Warning Marker.

Detail surrounding the Warning Marker will normally be included in the main body of the information text of PNC ACTion reports which is not visible to the officer when the vehicle is travelling above 7mph, it is therefore essential that this is displayed as a symbol. The most appropriate approach is to use a different symbol to those already included in this specification and to maintain compliance with DfT guidelines and therefore not requiring amendment to the 2020 Special Order; a red circle with plain background and black bold Arial font will be used:

The three Warning Markers identified by symbols will be:

- **FAIL TO STOP = FTS**
- **REGISTERED SEX OFFENDER = RSO**
- **WANTED PERSON = WTD**

To allow suppliers / developers to easily identify that warning markers exist and which symbol to display the formatting of the information field will follow existing rules for PNC warning signals and person descriptions:

The three warning marker abbreviations will be entered at the beginning of the first line of the 'free text' field (see 4.1.7 and 4.6.1); each using the above three-character format and separated by a space, for example; FTS RSO WTD

This change must be included in the next software release delivered in a reasonable timeframe.

4.6 PNC ACTion Warning Signal, Person Description, Warning Marker formatting priority

4.6.1 The priority for entering the abbreviations at the beginning of the free text field of a PNC ACTion report is:

1. Warning Signals (Max 3)

2. Person Description (all or part elements)

3. Warning Markers (Max 3)

Formatting examples would be:

- WS WS WS FREE TEXT

- IC1 M 25yrs FREE TEXT

- FTS RSO WTD FREE TEXT

- WS WS WS IC1 M 25yrs FREE TEXT

- WS FTS RSO WTD FREE TEXT

- IC1 M 25yrs FTS RSO WTD FREE TEXT

- WS WS IC1 M FTS WTD FREE TEXT

4.7 PNC ACTion Text To Speech (TTS)

4.7.1 Although not compulsory, it would be beneficial to users of the system when in Regulation 109 mode for TTS to be utilised to 'read' the content of the free text field (three lines of 66 characters) allowing officers to make decisions based on context. For example, an officer may approach a vehicle with a WEAPONS warning marker completely differently if they are aware a knife was concealed in the glovebox, rather than a knife being hidden in the boot. The TTS function can be automated or activated by a clearly defined button which allows replay.

4.7.2 If TTS is deployed it is not mandated to display a symbol for person description (3.1.1) as this will be included in the spoken voice, reducing screen clutter. If the symbol is displayed in addition to TTS then this is not classed as a breach of the specification.

4.7.3 The entire PNC ACTion marker will be visible to the driver below 7mph.

4.7.4 Following the initial 6 months of Regulation 109 software deployment it has become apparent from force reports that the use of TTS is invaluable to make best use of the system. Supplier uptake of the technology has been varied, ranging from full integration with options to 'read' different sections of the intelligence, to no implementation at all. Suppliers are urged to develop and deploy TTS with their software.

4.8   Vehicles of Interest Lists (VOI)

4.8.1   Vehicles of interest that do not meet the criteria for PNC are added to an ANPR system using a Vehicles of Interest (VOI) list to alert against. This is achieved in two ways;

- by uploading a spreadsheet created to the VOI list template (4.8.2) which is part of the NAS Technical Specification document
- by adding individual records using the NAS user interface

To meet national standards all VOI entries **MUST** comply with the VOI List template, which has a very strict 16 column structure.

4.8.2   VOI List Template (**Bold text in description field is a mandatory entry**)

Column	Description	Standard Words	Comment
1	**VRM**	*No spaces, Alphanumeric characters only*	
2	MAKE	*0 to 20 characters , no carriage returns or commas*	
3	MODEL	*0 to 20 characters , no carriage returns or commas*	
4	COLOUR	*0 to 20 characters , no carriage returns or commas*	
5	**ACTION**		*Only one value per entry:*
		Stop	Action can include a requirement to STOP the vehicle and take action as described
			Or
		Assess	To assess in the context at the time the vehicle comes to notice to determine action.
			Or
		No Alert	No Alert only to be used when a VOI list is submitted for monitoring purposes with no intention that any action is taken when the vehicle comes to notice
6	**WARNING SIGNALS**	**No Warning Known** **Warnings Present**	*SEE INFORMATION / ACTION BELOW AND SECTION 4.14 FOR MORE DETAIL* *Only one value per entry:*

			Generally, PNC ACTion should be used if warning signals are present. For VOI lists, 'No Warning Known' is most applicable.
			If it is *essential* to use a VOI list and warning signals other than Firearms (FI), Weapons (WE), Violence (VI) are present then 'Warnings Present' should be used with the agreed PNC abbreviation (max of 3) entered. If FI, WE, VI warning signals are present then a VOI must not be used (unless the intelligence is NOT for response) and a PNC ACTion marker created.
7	**REASON**	**Intel Serious Crime** **Cloned** **Low Crime** **Drugs** **Intel Sexual** **Intel Low Crime** **Offender management** **Impaired Driving** **Documents** **Disqualified** **Other** **No Insurance** **No MOT** **No Tax** **No Keeper** **LEA P1** **LEA P2** **LEA P3** **LEA P4** **LEA P5** **LEA P6**	*Only one value per entry:* No Insurance, No MOT, No Tax and No Keeper MUST NOT be used as a REASON to create a VOI list entry. If intelligence relates to one of these categories, then DOCUMENTS must be used. They are included in the template solely for the use of nationally populated lists to support NAS functionality.
8	**INTEL 3X5X2**	**Enter grading without X or spaces** *Max 3 characters, no carriage returns or commas*	
9	**INFORMATION/ ACTION**	**Free Text –** *Max 198 characters including spaces and punctuation. No carriage returns or commas*	Brief free text sufficient to add extra value and detail for the person dealing with activation.

			SEE INFORMATION / ACTION BELOW AND SECTION 4.14 FOR MORE DETAIL
10	**LEA AND AREA**	**Include Force Name/Area/other LEA reference** *Max 30 characters, no carriage returns or commas*	
11	**START DATE**	**Provide date in format [dd/mm/yyyy]**	
12	**WEED DATE**	**Provide date in format [dd/mm/yyyy]**	Entries will be inactive from the date specified and weeded from the system as soon as possible (i.e. next weed cycle)
13	PNC ID	*0 to 25 characters, no carriage returns or commas*	
14	**GSC MARKING**	**OFFICIAL (or)** **OFFICIAL-SENSITIVE**	*Only one value per entry:*
15	CAD	*0 to 25 characters, no carriage returns or commas*	
16	**CONTACT**	**Provide details of 24hour point of contact for enquiries if vehicle stopped.** *Max 60 characters, no carriage returns or commas*	

Column 9 - INFORMATION / ACTION

Warning Signals, Person Description, Warning Markers

- **If 'Warnings Present' is selected in column 6, then up to three PNC two character warning signal abbreviations should be included at the start of Information / Action text, separated by a space with a colon to mark the end of warning signals. The warning signal abbreviations are shown in para. 4.3.1**
- **If a person description is to be included this will follow the format shown in para. 3.1 'Design Principles' each element to be separated by a space with a colon to mark the end of person description.**
- **If Warning Markers are present the three character abbreviation described in para. 4.13.1 will be used each separated by a space with a colon to mark the end of warning markers.**
- **Listing priority is: #1 Warning Signals, #2 Person Description, #3 Warning Marker.**

For examples of formatting to ensure a VOI displays the correct symbols please refer to section 4.14.

It is vitally important that Vehicles of Interest (VOI) lists used to alert against in-car systems using Regulation 109 compliant software, only contain warnings that pose no immediate threat to officer safety. Therefore intelligence containing Firearms (FI), Weapons (WE) and Violence (VI) warning signals MUST be entered on a PNC ACTion report and NOT a VOI list. Changes to PNC ACTion guidance has been updated to accommodate this

A regulation 109 spreadsheet tool has been developed to assist forces to create NASPLE compliant VOI spreadsheets. This is available from the National Administrators.

4.8.3 To display a VOI list alert when the system is in Regulation 109 mode a different symbol to PNC ACTion markers will be used making it a simple matter for the driver to differentiate between the two. The symbol will be rectangular with an amber background at the top and white at the bottom. The amber section will display the ACTION as a single character and REASON for the marker will be a maximum of six characters, the white area will display the abbreviated name of the organisation creating the VOI list to assist with alert prioritisation. The name of the organisation will be abbreviated to a maximum of six characters, the full file name will not be displayed.

To facilitate the constraint on the number of available characters to display, the following character mapping must be applied:

Original Word	*Displayed Characters*
STOP	**S**
ASSESS	**A**
NO ALERT	**M**
Intel Serious Crime	**INTEL**
Cloned	**CLONED**
Low Crime	**CRIME**
Drugs	**DRUGS**
Intel Sexual	**INTEL**
Intel Low Crime	**INTEL**
Offender Management	**OFF MGT**
Impaired Driving	**IMP DVG**
Documents	**DOCS**
Disqualified	**DISQ**
Other	**OTHER**
*MIDAS Private**	**DISPLAY BLUE 'NO INS' SYMBOL**
*MIDAS Commercial**	**DISPLAY BLUE 'NO INS C' SYMBOL***
*MIDAS Gold**	**DISPLAY BLUE 'NO INS G' SYMBOL***
*No MOT	**DISPLAY BLUE 'NO MOT' SYMBOL**
*No Tax	**DISPLAY BLUE 'NO TAX' SYMBOL**
*No Keeper	**DISPLAY BLUE 'NO KEEP' SYMBOL**
LEA P1	**LEA P1**
LEA P2	**LEA P2**
LEA P3	**LEA P3**
LEA P4	**LEA P4**
LEA P5	**LEA P5**
LEA P6	**LEA P6**

*National 'Bulk' lists

**This change is to accommodate the MIDAS lists when downloaded from NAS which will automatically be allocated the MIDAS Private/Commercial/Gold naming convention. It is acknowledged to deploy the updated symbols may require a software change and in the interim displaying the 'NO INS' symbol, as we do now, will suffice. However it is strongly recommended that the new symbols are implemented as part of supplier software updates otherwise the important differences between the MIDAS VOI lists will not be realised until a vehicle is travelling below 7mph.

4.8.4 To display the name of the organisation creating the VOI list, character mapping will have to take place. A VOI list file name will begin with the organisations PNC ID followed by an underscore (for example 07_Cheshire VOI List); the agreed abbreviation will be displayed in the bottom 'white' section of the VOI symbol (in this example CHESH would be displayed). The following character mapping is to be used:

Character at start of VOI File name followed by underscore	Display in bottom white section of VOI symbol
52	A&S
40	BEDS
93	BTP
35	CAMBS
07	CHESH
48	COLP
59	CNC
17	CLEV
03	CMBRIA
30	DERBYS
50	D&C
55	DORSET
94	DVLA
201	DVSA
11	DURHAM
63	DPP
42	ESSEX
53	GLOS
06	GMP
61	GWENT
44	HANTS
41	HERTS
88	LEA
16	HUMB
46	KENT
04	LANCS
33	LEICS
32	LINCS
05	MERPOL
02	METPOL
24	MOD
36	NFOLK
60	NWP
12	NYP
34	NHANTS
10	NORPOL

31	**NOTTS**
90	**PSOS**
98	**PSNI**
62	**SWP**
14	**SYP**
21	**STAFFS**
37	**SFFOLK**
45	**SURREY**
47	**SUSSEX**
43	**TVP**
23	**WARWCK**
22	**WMERCA**
20	**WMIDS**
13	**WYP**
54	**WILTS**
735	**BCH**
CMPG	**CMPG**
NWMPG	**NWMPG**
LEA	**LEA**
TUTELAGE	**TULAGE**
TUTELAGEPLUS	**TUPLUS**
TUTELAGEMOT	**TU MOT**
TUTELAGEVED	**TU VED**
MIDASGOLD	**MIBGLD****
MIDASCOMM	**MIBCOM****
NATIONALROADS	**NRPOII**

**MIDASGOLD (MIDAS Gold) and MIDASCOMM (MIDAS Commercial) has been include to support forces who will not be using the NAS downloaded lists when they initially become available and wish to continue loading the lists manually to display the VOI symbol rather than the blue documents symbol

The updated list of organisations to be delivered when a supplier can be reasonably expected to include the information within a new software release.

4.9 VOI Symbols

4.9.1 VOI Symbols

S IMP DVG	S DOCS	S DISQ	S OTHER	S LEA P1-6
FORCE	FORCE	FORCE	FORCE	LEA

A INTEL	A CLONED	A CRIME	A DRUGS	A OFF MGT
FORCE	FORCE	FORCE	FORCE	FORCE

A IMP DVG	A DOCS	A DISQ	A OTHER	A LEA P1-6
FORCE	FORCE	FORCE	FORCE	LEA

M INTEL	M CLONED	M CRIME	M DRUGS	M OFF MGT
FORCE	FORCE	FORCE	FORCE	FORCE

M IMP DVG	M DOCS	M DISQ	M OTHER	M LEA P1-6
FORCE	FORCE	FORCE	FORCE	LEA
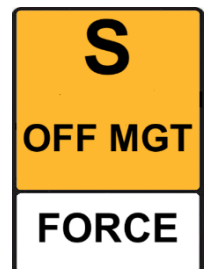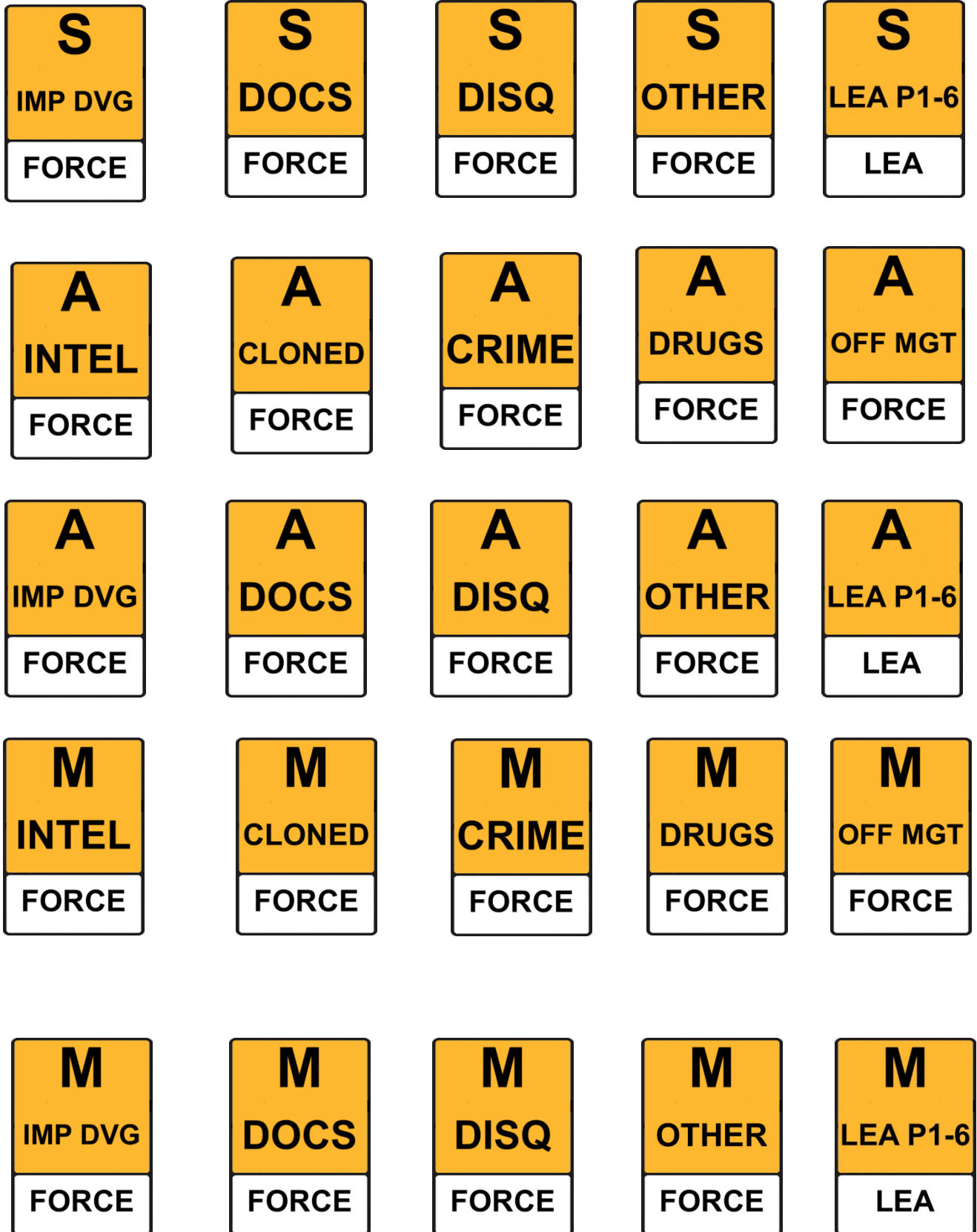
4.9.2 The entire content of the VOI list will be available to the driver below 7mph

4.10 VOI Warning Signals

4.10.1 VOI List warning signals – The template has been simplified to offer two options 'No Warning Known' or 'Warnings Present'. If 'No Warning Known' is selected then nothing

will be displayed on the Regulation 109 screen. If 'Warnings Present' is selected then a single red warning triangle, with amber background and exclamation mark in the middle will be displayed, to inform the driver that a warning exists.

4.10.2 As VOI Lists are in the main distributed locally and not available to officers without access to an ANPR system, any marker posing a serious threat to officer safety should be included on a PNC ACTion marker not a VOI entry. Warning signals associated with VOI Lists should only be used if there is no option to add to a PNC marker AND the threat level is low. Firearms, Weapons and Violence warning signals must be included in a PNC ACTion report and NOT a VOI list.

4.11 VOI Information Action Field

4.11.1 VOI List Information Action Field – This field is free text and to be used to add extra value and context to the information. The field has recently been updated with guidance to only include a maximum of 198 characters (same as PNC) with the first entries to show the PNC warning abbreviations if 'Warnings Present' has been selected. Warning signals will follow the PNC two character abbreviations (4.2.1) with each warning separated by a space, a maximum of three warnings will be included, with a colon indicating the end of the warning symbol entries, for example SU SH IS :

4.12 VOI Person Description

4.12.1 A person description, if included, will align to the 6 + 1 PNC/PHOENIX visual identity code (as described in section 3.1.1) and immediately follow the colon (no space) after the warning signals. Each element of the description will be separated by a space and concluded with a colon, for example;   SU SH IS :IC1 M 25yrs : It is possible for all elements of a person description to not be included (for example age may not form part of the description), in which case display only the available elements.

4.13 VOI Warning Markers

4.13.1 Certain information, which is absolutely crucial to how an officer responds to an incident, doesn't always fall into the normal category of Warning Signals (which is covered in sections 4.2.1 and 4.10.1) but is just as important for both officer and public safety, this is identified as a Warning Marker.

Detail surrounding the Warning Marker will normally be included in the main body of the information text of Vehicle of Interest lists which is not visible to the officer when the vehicle is travelling above 7mph, it is therefore essential that this is displayed as a symbol. The most appropriate approach is to use a different symbol to those already included in this specification and to maintain compliance with DfT guidelines and therefore not requiring amendment to the 2020 Special Order; a red circle with plain background and black bold Arial font will be used:

The three Warning Markers identified by symbols will be:

- **FAIL TO STOP = FTS**
- **REGISTERED SEX OFFENDER = RSO**
- **WANTED PERSON = WTD**

To allow suppliers to easily identify that warning markers exist and which symbol to display the formatting of the information field will follow existing rules for warning signals and person descriptions:

The three warning marker abbreviations will be entered on the first line of the 'free text' field in the priority outlined in section 4.14; each using the above three-character format separated by a space and concluded with a colon, for example; FTS RSO WTD :

This change must be included in the next software release delivered within a reasonable timeframe.

4.14 VOI Warning Signal, Person Description, Warning Marker formatting priority.

4.14.1 The priority for entering the abbreviations at the beginning of the free text field of a VOI report is:

1. Warning Signals (Max 3)

2. Person Description (all or part elements)

3. Warning Markers (Max 3)

Formatting examples would be:

- WS WS WS :FREE TEXT

- IC1 M 25yrs :FREE TEXT

- FTS RSO WTD :FREE TEXT

- WS WS WS :IC1 M 25yrs :FREE TEXT

- WS :FTS RSO WTD :FREE TEXT

- IC1 M 25yrs :FTS RSO WTD :FREE TEXT

- WS WS :IC1 M 25yrs :FTS RSO WTD :FREE TEXT

4.15 VOI Text to Speech (TTS)

4.15.1 TTS is also an option for reading the content of the VOI Information Action Field. The interaction can be the same as PNC for consistency. Should a VOI entry contain more than the 198 characters, (this will be a validated feature once NAS becomes available, but in the interim with legacy systems, it cannot be easily enforced) then the TTS engine will truncate to the 198 characters. If this feature is deployed there will be no requirement to display a symbol for person description (3.1.1) as this will be included in the spoken voice, reducing screen clutter. If the symbol is displayed in addition to TTS then this is not classed as a breach of the specification.

4.15.2 Following the initial 6 months of Regulation 109 software deployment it has become apparent from force reports that the use of TTS is invaluable to make best use of the system. Supplier uptake of the technology has been varied, ranging from full integration with options to 'read' different sections of the intelligence, to no implementation at all. Suppliers are urged to develop and deploy TTS with their software.

4.16 Bulk Lists

4.16.1 Bulk VOI Lists (MIDAS Private, MIDAS Commercial, MIDAS Gold, No Tax, No Keeper and No MOT) will be identified with different symbols:

4.16.2 Bulk lists will never contain warning signals

4.16.3 In the event of no other alert being present then up to four symbols can be displayed in regulation 109 mode should a vehicle match against them. However if PNC ACT Markers, PNC Extract, VOI List and associated warning signals are displayed then it is not compulsory to display the bulk list symbols to make best use of screen real estate and to avoid driver confusion.
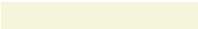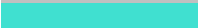
4.16.4 The entire content of a bulk list entry will be available to the driver below 7mph.

4.17 Display Colours

4.17.1 Colour display is mentioned throughout this document, from colour of vehicles to borders   and infill of symbols. The following table contains suggested RGB codes to display:

Make, Model, Colour (MMC) and Person Description (PD) Symbol Colours

MMC / PD Symbol	Colour	Suggested RGB Values		
MMC / PD Symbol Outer Border		0	0	0
MMC/ PD Symbol Infill		255	255	255

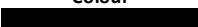MMC Colour Strips either side of text in symbol to match colour identified in vehicle description as below:

Colours included in MMC data symbol

Colour		Suggested RGB Values		
Beige		245	245	220
Black		0	0	0
Blue		0	0	255
Bronze		205	127	50
Brown		157	77	23
Cream		255	253	208
Gold		212	175	55
Green		0	128	0
Grey		128	128	128
Maroon		172	0	0
Orange		255	165	0
Pink		255	192	203
Purple		128	0	128
Red		255	0	0
Silver		192	192	192
Turquoise		64	224	208
White		255	255	255
Yellow		255	255	0

ACTion Marker Symbol Colours

ACT Marker	Colour	Suggested RGB Values		
HIGH ACT / LOS Outer Border and Infill		187	47	42
MEDIUM ACT / SIS Colour1 for Improved Contrast Outer Border and Infill		233	63	36
MEDIUM ACT / SIS Colour2 for Improved Contrast Outer Border and Infill		143	194	73
LOW ACT Outer Border and Infill		38	87	27
HIGH / MEDIUM / LOW Inner Border		255	255	255
PNC EXTRACT Infill		243	186	79
PNC EXTRACT Inner Border		255	255	255
PNC EXTRACT Outer Border		38	87	27

VOI Marker Symbol Colours

VOI Marker	Colour	Suggested RGB Values		
VOI Marker Colour1		243	186	79
VOI Marker Colour2		255	255	255
VOI Marker Outer Border / Colour Divide		0	0	0

Warning Signals / Warning Markers / Hazard Marker Symbol Colours

Warning / Hazard Marker	Colour	Suggested RGB Values		
ACT Warning Signal Border		217	59	49
ACT Warning Signal Infill		255	255	255
VOI Warning Signal Border		217	59	49
VOI Warning Signal Infill		243	186	79
Hazard		240	134	53
Warning Markers Border		217	59	49
Warning Markers Infill		255	255	255

Document Marker Symbol Colours

NoTax, No Keep, MIDAS, MIDAS Commercial, MIDAS Gold, No MOT	Colour	Suggested RGB Values		
Document Marker Outer Border /Infill		11	34	97
Document Marker Inner Border		255	255	255

Camera Identification / Location Symbol Colours

Camera Symbol	Colour	Suggested RGB Values		
Camera Identification symbol Outer Border		0	0	0
Camera Identification symbol Inner Border		255	255	255
Camera Identification symbol Infill		249	239	84
Location Sign Outer Border		3	164	80
Location Sign symbol Inner Border		255	255	255
Location Sign symbol Infill		3	164	80

5 Remote Alerting

5.1 Principles

5.1.1

ANPR systems used in a mobile environment are now capable of receiving alerts from fixed and re-deployable camera infrastructures (remote cameras) enabling patrols to self-deploy in response to those alerts (remote alerts).

Previous guidance in respect of the information available to a driver travelling above 7mph required the location of the remote camera to be displayed on a symbol limited to six characters which was found to be insufficient to enable effective response to alerts. Legal advice in respect of Regulation 109(1)(d) confirms that information about the location of a remote ANPR camera and the direction of travel for a vehicle subject to an alert from that camera can constitute 'information to assist a driver to reach his destination' and is therefore information that can be displayed to a driver at all times including when travelling over 7mph.

It is important to minimise risk of driver distraction, such that the information displayed should be the minimum required to enable the driver to reach a location to intercept a vehicle subject to a remote alert. Displayed information (truncated if necessary) may therefore be greater than the six character symbol previously advised, but should only offer sufficient detail to support an effective response.

For clarity, this amendment only relates to alerts from remote locations, alerts from cameras fitted to the driver's vehicle must still be identified by the symbols shown in section 3.1.2.

Below are the options available to identify a remote camera:

Option 1: Display a symbol bearing the minimum number of characters to identify the location and direction of travel of a vehicle which is subject of an ANPR alert from a remote camera.

Option 2: Display the same camera symbol shown in section 3.1.2 using the word 'Remote'

Option 3: To remove the word 'Remote' and display the road number and direction of travel (N,S,E or W) up to a maximum of 6 characters:

Option 4: Use same text to speech principles adopted for PNC / VOI to read out the camera location and direction of travel

Option 5: Use on screen mapping to identify the location of the camera

Option 6: Any combination of:

- Options 1, 4 and 5
- Options 2, 4 and 5
- Options 3, 4 and 5

Once the vehicle is travelling below 7mph full details can be displayed to the driver.

6   Display Priority

6.1   Order of symbol display

6.1.1   To ensure that driver distraction is kept to a minimum it is important that symbols are presented in a consistent way and restricted to only those supporting a safe and appropriate operational response to an activation. To achieve this a strict order of symbol display must be followed:

- Overview image (if present, otherwise nothing displayed)
- Registration Plate Image / Registration plate as interpreted by ANPR system (for immediate comparison to identify misread).
- MMC symbol (if no data present then nothing is displayed)
- ACT Symbol - HIGH, MEDIUM, LOW, EXTRACT
  - Only the highest marker will be displayed
  - Preferable for Extract symbol to be removed from view in the event of a FastTrack response entering the system
- ACT Warning Signal (Max 3, in priority shown in section 4.2.1)
- ACT Hazard symbol or highlight section of screen to draw drivers attention
- ACT Warning Marker
- ACT Person Description symbol (If present, otherwise nothing displayed)
- VOI Marker
  - Max one displayed if ACT also present, otherwise maximum of two VOI markers in priority shown in section 4.9.1
- VOI Warning Signal
  - Single symbol to be displayed if 'Warnings Present' selected
- VOI Warning Marker (Max 3)
- VOI Person Description symbol (If present, otherwise nothing displayed)

- MIDAS, MIDAS Commercial, MIDAS Gold, No Tax, No Keeper, No MOT (aligned to 4.16.1)
- Camera identification / location symbol

7 Summary

Suppliers will have different innovative ways of adopting the way ANPR alerts and warnings are represented to meet R109. However to promote consistency and support operational transition between ANPR products, to meet the minimum viable product suppliers must follow the basic symbol shapes, colours and text identified within this document, accepting that colour shading and slight deviation is inevitable. Similarly, where there is a priority for displaying alerts and / or warnings the exact priority high to low must be followed. If a feature is described as optional, then it is at the discretion of the supplier if they want to implement or not, bearing in mind this may make a product less desirable.

8 Contact

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