

UK Pavement Management System



Technical Note 45

Data Topic 130-02 guidance notes for UKPMS Developers

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Document Information

Title (Sub Title)	Technical Note 45 Data Topic 130-02 guidance notes for UKPMS Developers
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Description	This Technical Note provides guidance for UKPMS Developers to allow them to produce Data Topic 130-02 for the England Single Data List.

Document History

Version No	Status	Author	Date	Changes from Previous Version
0.01	Draft	JMG	19.06.13	First draft based on 2012/13 version but revised to remove date specific references so that the Technical Note applies to any year from 2013/14 onwards until further notice.
0.02	Draft	RAC	04.07.13	Transferred to new template.
0.03	Draft	RAC	15.07.13	Reviewed by JMG
1.00	Issue	RAC	31.07.13	Ratified by Paul Hersey for DfT
1.01	Draft	RAC	14.01.19	The website references have been updated
1.02	Draft	RAC	18.01.19	Reviewed by CCS
2.00	Issue	RAC	26.02.19	Ratified by Sarah Lasher for DfT
2.01	Draft	RAC	02.02.21	Draft based on version 2.00 but revised as follows: <ul style="list-style-type: none">Website references updated
2.02	Draft	RAC	10.02.21	Reviewed by CCS
3.00	Issue	RAC	24.02.21	Ratified by Ashley Singh for DfT

Document Owner

The owner of this document is the Department for Transport.

Document Support

Support for this document is provided by Linhay Consultancy Ltd and Hyperion Infrastructure Consultancy Ltd who can be contacted via ukpms@hyperion-uk.com. These organisations have been appointed as the UKPMS system accreditors by the UK Roads Board.

This document can be found online on the [RCMG website](#).



Introduction

This Technical Note provides guidance for UKPMS Developers to allow them to produce Data Topic 130-02, (non-principal classified roads where maintenance should be considered), for the England Single Data List. It provides:

- **Changes since the last version**
- **Background Information** on survey coverage
- **Processing & Reporting Requirements** including an example report

Changes since last version

The website references have been updated.

Background Information

Data Topic 130-02, non-principal classified roads where maintenance should be considered, is based on SCANNER data collected as follows:

- **B Roads:** 100% of the network in both directions.
- **C Roads:** 100% of the network in one direction.

For any given length of road, data from either the current financial year or the previous financial year may be used.

Processing & Reporting Requirements

The data are processed using the SCANNER Road Condition Indicator (RCI) with a user-specified weighting set. The RCI should use data collected over the last two financial years e.g. 1 Apr 11 to 31 Mar 13 for the 2012/13 results.

The formula used to calculate the national indicators is:

$$\frac{\text{Numerator} \times 100}{\text{Denominator}}$$

For 130-02, intermediate results are calculated separately for the B and C roads. In each case:

Numerator: the total length of B (or C) roads greater than or equal to the Red threshold.

Denominator: the total surveyed length of B (or C) roads.

130-02 is obtained by combining the intermediate results for the B and C roads using carriageway length to provide a weighted average of the two figures.

All lengths shown on the reports are given in km to 3 decimal places and all percentages except the 130-02 result are given to 1 decimal place. The 130-02 result is given to the nearest whole number.

Confidence limits are not specified for 130-02.



Notes:

- *The road classification is fundamental to this report. It is important that this section attribute is populated accurately.*
- *The report excludes roundabouts. In general SCANNER data are not collected on roundabouts, but if such data are present, they should not be included in any of the figures on the report. Roundabouts are defined using the 'Road Type' section attribute.*
- *All road surface types are included.*
- *On occasion some of the SCANNER parameters used in the RCI calculation may be missing from individual subsections. Such subsections are excluded from the report. That is, the report is based only on those subsections where all the SCANNER parameters used by the weighting set have been recorded.*
- *If the data are not provided on coincident subsections then the SCANNER RCI is not valid and it is not possible to produce the PI. [The RCI calculation is based on the premise that all data for a section within a particular survey are provided using the same subsection breakdown. So suppose Survey 123 on Section A345 uses subsections 0-7, 7-17, 17-27 etc for rutting data (say). All other measured parameters for that survey on that section must use the same subsections. In the past there have been problems due to cracking data using a different set of subsections from the other measured parameters.]*



Content of the Reports

Other than that the reports should be presented in the three parts given below, the following is not intended to give guidance on the layout or format of the report merely to show what content should be included and how that content should be derived.

Part 1 – Run Details & Data Selected

This part of the report contains the details and identifiers for the run.

Ref	Description	Example
1.1	Authority	Oldshire CC
1.2	UKPMS System	Bloggs PMS
1.3	UKPMS System Version	2.45
1.4	Run Identifier	ABC01
1.5	Run Date	05/04/2013
1.6	Weighting Set Identifier	WSBCv0202
1.7	Rule Set Identifier	RP10.01
1.8	From Date	01/04/2011
1.9	To Date	31/03/2013
1.10	Combination method	Sum
1.11	Threshold type	Bin

Users of the report are encouraged to check the UKPMS System and Version on the [RCMG website](#) to ensure that the version of the UKPMS system being used to produce the results is accredited to produce valid results for 130-02 for the relevant year.

Note:

- For those Developers who choose to implement the RCI as a type of Automatic Pass, the Run Identifier is simply the Automatic Pass identifier.

This is then followed by the criteria used to select the sections and surveys. Generally, for 130-02, this will simply be to select all sections with a DfT Classification Code of 4 or 5. However, it may be necessary for an authority to specify particular surveys; for example if multiple SCANNER surveys have been carried out within the date range for 130-02 and not all of these were intended for 130-02. The report must give the type of criteria (e.g. survey number, or a specified section attribute) and the values included for that attribute.

Ref	Description	Example
1.12	Criteria Type	DfT Classification Code
1.13	Criteria Value	4

Note that currently the Road Condition Indicator algorithm and weighting sets only apply to SCANNER data. If, in the future, they are extended to other survey types then there will be a requirement to select the 'TTS' survey type for 130-02.



Part 2 – Surveyed Network

This part of the report gives the possible survey lane length together with the length which has actually been surveyed. Separate figures should be provided for the B Class roads (DfT Classification 4) and the C Class roads (DfT Classification 5). This is achieved in the Road Condition Indicator algorithm by splitting the selected network by DfT Classification.

Ref	Symbol	Description	Example
2.1		Selected network sections	218
2.2		Selected network length	165.438
2.3		Possible survey lane length	321.445
2.4		Actual survey lane length	316.650
2.5		Percentage of selected network surveyed in survey period	98.5%
2.6	N	Number of subsections surveyed	31697

The selected network sections figure is the number of sections in the selected network (i.e. with DfT classification 4 or with DfT classification 5).

The selected network length is the sum of the *Section Length Number* for the selected network.

Note:

- Any sections which are roundabouts are, of course, excluded from these figures (Ref 2.1 and Ref 2.2) and from all other figures on the report.

The possible survey lane length is calculated as:

$$\sum(\text{Section Length Number multiplied by Nearside Multiplier for the section Road Type}),$$

for the selected network.

The actual survey lane length is the sum of all subsection lengths with eligible data. (The definition of 'eligible' here is that the data satisfy the date criteria, plus any survey and section criteria; and only those subsections with all SCANNER parameters for the weighting set are eligible).

The percentage (Ref 2.5) is calculated as actual survey lane length (Ref 2.4) divided by possible survey lane length (Ref 2.3) expressed as a percentage.

Note:

- For B roads this indicates whether the authority has achieved the coverage requirements (as B roads are surveyed in both directions).

The number of subsections surveyed (Ref 2.6) is the number of subsections with eligible data.

In addition to providing the above statistics a breakdown of the network on the basis of Rural/Urban/Undefined is also required for B Class roads and for C Class roads (separately).



Ref	Description	Example
2.7	Rural surveyed network	230.346
2.8	Urban surveyed network	118.143
2.9	Undefined surveyed network	1.640
2.10	Total surveyed network percentage	82.0%

The rural surveyed network is the sum of all rural subsection lengths with eligible data; similarly the urban surveyed network is the sum of the urban subsection lengths with eligible data. The undefined network length is the sum of all those subsections with eligible data but which are neither urban nor rural. Together the rural, urban and undefined figures should add to give the actual survey lane length (Ref 2.4).

The total surveyed network percentage is the actual survey lane length (Ref 2.4) expressed as a percentage of the selected network length (Ref 2.2).

Note:

- For C roads this indicates whether the authority has achieved the survey requirements (as C roads are surveyed in one direction only).
- As B roads are surveyed in both directions this figure is normally greater than 100% for B roads.

Part 3 – 130-02 Results

This part of the report contains the 130-02 result.

As the weighting set uses a Bin type threshold, the length and percentage in each bin is given. This information is required for B roads and for C roads (separately).

Ref	Description	Example
3.1	Bin description	Red
3.2	Bin threshold	≥ 100
3.3	Length (km) in bin	15.516
3.4	Percentage in bin	4.9%

Note that the sum of the length in all bins should total to give the actual survey lane length (Ref 2.4) for that road class, and the sum of the percentages should be 100% (subject to rounding errors).

The final figure in the report is the 130-02 value. This part of the report gives a combined figure including both the B and C roads in a single result.

Ref	Description	Example
3.5	130-02	10%

130-02 is obtained by taking a weighted average of the Red bin B Class and C Class figures, using the carriageway length (Ref 2.2) to provide the weighting.

For example suppose the statistics are as shown in the table below:



<i>DfT Class</i>	<i>Carriageway length (Ref 2.2)</i>	<i>Surveyed lane length (Ref 2.4)</i>	<i>Red length (Ref 3.3)</i>
4	100km	95km	5km
5	800km	80km	20km

The 130-02 figure is calculated as:
 $((5 \times 100 / 95) + (20 \times 800 / 80)) / (100 + 800) = 23\%$

Using the reference notation this is:
 $((3.3_B \times 2.2_B / 2.4_B) + (3.3_C \times 2.2_C / 2.4_C)) / (2.2_B + 2.2_C)$

130-02 is expressed to the nearest whole percentage.



Example Report: 130-02

Run Details & Data Selected

Authority: Oldshire CC
 UKPMS: Bloggs PMS v2.45
 Run Identifier: ABC01
 Run Date: 05/04/2013
 Weighting Set ID: WSBCv0202
 Rule Set ID: RP10.01
 Dates: From 01/04/2011 to 31/03/2013
 Combination method: Sum
 Threshold type: Bin

Criteria:

DfT classification 4
 DfT classification 5

Surveyed Network

DfT Classification	4		5	
Selected network sections:	218		526	
Selected network length:	165.438 km		426.838 km	
Possible survey lane length:	321.445 km		846.193 km	
Actual survey lane length:	316.650 km	98.5%	350.129 km	41.4%
Number of subsections:	31697		35260	
Rural surveyed network:	260.123 km		230.346 km	
Urban surveyed network:	55.647 km		118.143 km	
Undefined surveyed network:	0.880 km		1.640 km	
Total surveyed network:	316.650 km	191.4%	350.129 km	82.0%

PI results

Green	(<40)	218.488 km	69.0%	173.313 km	49.5%
Amber	(>=40)	82.646 km	26.1%	136.545 km	39.0%
Red	(>=100)	15.516 km	4.9%	40.271 km	11.5%

130-02 **10%**