

# **EAP139: Methodology for assigning Red-Amber-Green status for 2021 Census returns**

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## 1. Purpose

It's common practice in performance management contexts to assess the quality of an outcome using a "traffic-light" system; Red, Amber or Green – also known as a RAG status. This paper provides the outline of the proposed RAG status methodology for live returns during the 2021 Census collection.

## 2. Background

During the 2019 Rehearsal the Response Chasing Algorithm (RCA) compared live and expected return rates to identify areas with shortfalls in returns ([Meirinhos, 2019b](#)). Shortfalls were assigned a RAG status, which was visible in the 2019 RCA Dashboard (See Annex F). However, the evaluation of the 2019 Rehearsal concluded that the RAG status needed to be further developed to be more informative.

The aim of the improved RAG status methodology is to;

1. Give an overview of how the collection operation is doing in comparison to the census quality targets
2. Flag what and where the issues that need actioning are; low response and/or high variability depending on geography level

In developing the new methodology, Census Statistical Design (CSD) consulted other business areas; Question and Questionnaire Design and Methodology within the ONS and other national statistics agencies; Stats Canada, Stats NZ, US Census Bureau and Australian Bureau of Statistics.

## 3. Discussion

For the 2021 Census the ONS has committed to achieving key quality targets; reaching an overall response of 94%, at least 80% response in each local authority and minimised variability; proposed to be 90% of LSOAs in an LA falling within 10% of the response mean (Martyna, 2020). In order to understand if we are on track to reach these targets, a tool measuring this is needed.

The RAG status is designed to act as a decision support tool for the governance of the census collection operation. The RAG status will be widely visible in the future 2021 Census data dashboard, which is planned to be shared across teams and in daily governance meetings. It is therefore imperative that the RAG status methodology is fit for purpose; flagging issues that need actioning and transparent about how issues are flagged.

For the 2021 Census, the following is proposed;

<b>Geography level</b>	<b>Overview of proposed methodology</b>
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Lower Super Output Area	RAG status determined by shortfall in live vs expected returns. Proposed thresholds in Annex A
Team Leader Area	RAG status determined by shortfall in live vs expected returns. Proposed thresholds in Annex A
Local Authority	RAG status determined by return shortfall and variability in return rates within the local authority. Relative importance of return rate and variability is adjusted throughout the operation (See Annex A). Combined to create a single RAG status (See Annex A).
Regional	Average RAG status score for the LAs making up the region. Proposed final scores in Annex A
National	No coloured RAG or calculation – but show key figures for; <ul style="list-style-type: none"> <li>- The forecasted overall return rate for England &amp; Wales</li> <li>- The number of LAs that are forecasted to reach 80% overall response out the total number of LAs.</li> </ul>
Online	Monitor the online proportion of response, and RAG status this against targets on a local authority and national level

### **Lower Super Output Area (LSOA) and Team Leader Area (TLA) RAG status**

The predictive modelling and maximising response strategies are conducted and targeted at LSOA level, indicating a need to monitor returns. TLAs are the operational geographies for field staff; representing the work area of up to 12 census field officers. The RAG status at LSOA and TLA level will be a simple measure of live versus expected returns against the thresholds outlined in Annex A.

The Field Prioritisation Algorithm (Meirinhos, 2019a) will be working at an OA level to minimise variability within each LA, and so implicitly, working to improve response in the worst performing OAs will work to reduce the spread within and across LSOAs. However, there are no explicit quality targets for variability within LSOAs, and indeed, given the (average) number of LSOAs per LA, it would be neither practical nor informative to measure and so these are not included in the RAG status at LSOA level.

### **Local Authority (LA) RAG status**

Given the census LA variability and response target, the geography provides a sensible level to introduce an enhanced calculation to determine RAG status. With 336 LAs across England and Wales, this RAG status will be crucial to flag issues for action; interventions or further ad-hoc analysis.

The RAG status at LA level will be determined by two components;

1. Return Rate Difference (RRD): measured as the difference between live and expected returns
2. Variability (V%) measured as the proportion of LSOAs in the LA with a return rate falling within 10% of the return rate mean for the LA (Martyna 2020).

Within each LA, each component is assigned a daily score from 1 (best) to 3 (worst) based on proposed thresholds (Annex A). Each component will then have a weight multiplied by its score to reflect what stage of the collection operation we are in, giving a final equation of:

$$(\text{RRD score} \times \text{daily weight}) + (\text{V\% score} \times \text{daily weight}) = \text{Final RAG score}$$

The purpose of the weights is to accurately show what issues can be actioned. For example, until field staff go live, we have no means by which to target variability issues, thus flagging a potential problem prior to this is redundant. As the weights always add up to 1.0 (or 100%), the range of possible final scores will always be between 1 to 3 (final score thresholds in Annex A).

We propose that the component measuring variability will have a low weight (0.1) until tranche 2 field staff commence work (Census Day + 2), at which point the weights begin to gradually change until the two components are at an equal weight of 0.5 three weeks before the end of collection. The last three weeks will have a constant equal weight of 0.5 applied to both components (see table in Annex A).

In a hypothetical scenario, these would be the results;

<b>Components</b>	<b>Day</b>	<b>Value</b>	<b>Score</b>	<b>Weight</b>	<b>Weighted score</b>	<b>Final score</b>
RRD	7	0.20	1	0.9	= 0.9	1.2
V%	7	86%	3	0.1	= 0.3	
RRD	50	0.20	1	0.5	= 0.5	2.0
V%	50	86%	3	0.5	= 1.5	

Whilst the values remain the same in this scenario, the changing weights places more emphasis on the V% on day 50 compared to day 7, bringing the final score up from 1.2 to 2.0, shifting the RAG status from green to amber. This is not to say that variability issues are not important prior to census day + 2, but that they are not heavily weighted as it cannot be actioned.

In determining the weighting strategy and thresholds, special attention has been paid to ensuring that the weights and thresholds minimise RAG status volatility over time. The above methodology has been tested using 2019 Census Rehearsal data as well as using predicted data for the V% from the Field Operation Simulation (FOS) (Ward, et al., 2019).

### **Other approaches for Local Authority RAG status:**

Alternative approaches to calculating an LA RAG status, such as using flat weights or using a risk impact table instead of final score have been explored (Annex C, Annex D, Annex E)

However, the simulations for a risk impact table flag issues as red from the first day of collection both in the FOS output data (Ward, et al., 2019) and the rehearsal data (Annex D, Annex E). Furthermore, the simulation using flat weights either flag everything as green (although we know this was not the case during rehearsal) or everything as amber/red long before we are able to take action to rectify the issues (Annex C).

This suggests that neither of the approaches are fitting given the purpose of the RAG status.

### **Regional and National RAG status:**

On the regional level, the proposed approach is to calculate the average final RAG scores for the LAs belonging to the specific region. Following this approach, the regional RAG status considers the same components as the LA RAG status without the need to aggregate the measures or change thresholds. The final score RAG will follow the same thresholds as the LA (See Annex A).

To track the overall progress of the census collection operation, we propose to not provide a coloured RAG or calculations. Instead, viewers will have three measures indicating progress against the overall and local authority response targets and the variability target; overall final forecasted return rate, number of LAs forecasted to reach 80% response rate and number of LAs reaching the variability target (Martyna, 2020). The ad-hoc team in CSD will also be available for more thorough weekly analysis of the national picture.

### **Online RAG status:**

We will monitor the online proportion of response, and RAG status this against targets that, at a local level consider the proportion of paper questionnaire initial contacts and an expected level of mode switching, and at a national level sum to our overall quality target for online response.

## **4. Conclusion**

This paper has outlined the proposed method to derivate a RAG status at all geography levels during live operations as well as the proposed approach for tracking online response.

An informative RAG status is imperative to manage the census collection operation. If the programme is in danger of not reaching any of the quality targets, this needs to be flagged promptly. The purpose is to display what issues needs to be actioned where. The approach presented offers a more informative way of doing this than previously done, whilst still acknowledging that human intervention will be needed to perform more thorough analysis during live operations.



## 5. List of Annexes

- Annex A: Proposed thresholds for all geography levels and weights for LA
- Annex B: RAG status simulations using proposed methodology
- Annex C: RAG status simulation using proposed thresholds and constant weights
- Annex D: RAG status simulation using a risk impact table method 1
- Annex E: RAG status simulation using a risk impact table method 2
- Annex F: 2019 RCA Dashboard maps with RAG status

## 6. References

Martyna, Kamila (2020) EAP138: Variability Target for Response Rates in Collection [https://share.sp.ons.statistics.gov.uk/sites/cen/csod/CSOD\\_Stats\\_Design/Statistical\\_Design/Presentations/Design\\_Authority\\_Board\\_2011\\_variability\\_v2.docx](https://share.sp.ons.statistics.gov.uk/sites/cen/csod/CSOD_Stats_Design/Statistical_Design/Presentations/Design_Authority_Board_2011_variability_v2.docx)

Meirinhos, Victor (2019a) EAP115: Field Prioritisation Algorithm

Meirinhos, Victor (2019b) EAP114: Independent Methodological Review: Response Chasing Algorithm <https://www.statisticsauthority.gov.uk/wp-content/uploads/2020/06/EAP114-Independent-Methodological-Review-Response-Chasing-Algorithm.pdf>

Ward, K., Barber, P., Priestly, M., Fraser, O. (2019) EAP117: Simulating Census Operations to inform Resource Decisions

## Annex A – Proposed thresholds at all geography levels and weights for LA:

Geography Level	Component	RAG Status (Score)	Thresholds
LSOA	Return Rate Difference	Green (1)	RRD $\geq$ 0
		Amber (2)	-7.5 $\leq$ RRD $<$ 0
		Red (3)	RRD $<$ -7.5
TLA	Return Rate Difference	Green (1)	RRD $\geq$ 0
		Amber (2)	-5 $\leq$ RRD $<$ 0
		Red (3)	RRD $<$ -5
LA	Return Rate Difference (RRD)	Green (1)	RRD $\geq$ 0
		Amber (2)	-5 $\leq$ RRD $<$ 0
		Red (3)	RRD $<$ -5
	Variability % (V%)	Green (1)	V% $\geq$ 90%
		Amber (2)	88% $\leq$ V% $<$ 90%
		Red (3)	V % $<$ 88%
	Final RAG Status score	Green	1.0 $\&$ $\leq$ 1.67
		Amber	$>$ 1.67 $\&$ $\leq$ 2.34
		Red	$>$ 2.34
Regional	Average Final Score for all LAs	Green	1.0 $\&$ $\leq$ 1.67
		Amber	$>$ 1.67 $\&$ $\leq$ 2.34
		Red	$>$ 2.34

Time period	LA Weight
<i>Up until Census Day + 2</i>	RRD weight: 0.9 V% weight: 0.1
<i>Census Day + 3 and until last three weeks of collection</i>	Daily change calculated as; 0.4/days until last three weeks of collection (see *)
<i>Last three weeks of collection</i>	RRD weight: 0.5 V% weight: 0.5

\*In simulation the daily increase/decrease is 0.017391 added/subtracted



## Annex B – Proposed LA methodology simulation on rehearsal and FOS data

**Data used**

2019 Rehearsal data

FOS data (V%)

2019 Rehearsal data (RRD)

**Thresholds RRD**

1:  $\geq 0$   
 2:  $< 0$  and  $\geq -5$   
 3:  $< -5$

1:  $\geq 0$   
 2:  $< 0$  and  $\geq -5$   
 3:  $< -5$

**Thresholds V%**

1:  $\geq 90\%$   
 2:  $< 90\%$  and  $\geq 88\%$   
 3:  $< 88\%$

1:  $\geq 90\%$   
 2:  $< 90\%$  and  $\geq 88\%$   
 3:  $< 88\%$

**Weights**

RRD: 0.9 until CD + 2, 0.5 last three weeks  
 V%: 0.1 until CD + 2, 0.5 last three weeks

	Hackney	TH	Carlisle	Ceredigion
Day	Final RAG	Final RAG	Final RAG	Final RAG
1	AMBER	AMBER	AMBER	AMBER
2	AMBER	GREEN	AMBER	GREEN
3	GREEN	GREEN	GREEN	GREEN
4	GREEN	GREEN	GREEN	GREEN
5	GREEN	GREEN	GREEN	GREEN
6	GREEN	GREEN	GREEN	GREEN
7	GREEN	GREEN	GREEN	GREEN
8	GREEN	GREEN	GREEN	GREEN
9	GREEN	GREEN	GREEN	GREEN
10	GREEN	GREEN	GREEN	GREEN
11	GREEN	GREEN	GREEN	GREEN
12	GREEN	GREEN	GREEN	GREEN
13	GREEN	GREEN	GREEN	GREEN
14	GREEN	GREEN	GREEN	GREEN
15	GREEN	GREEN	GREEN	GREEN
16	GREEN	GREEN	GREEN	GREEN
17	GREEN	GREEN	GREEN	GREEN
18	GREEN	GREEN	GREEN	GREEN
19	GREEN	GREEN	GREEN	GREEN
20	GREEN	GREEN	GREEN	GREEN
21	GREEN	GREEN	GREEN	GREEN
22	GREEN	GREEN	GREEN	GREEN
23	GREEN	GREEN	GREEN	GREEN
24	GREEN	GREEN	GREEN	GREEN
25	GREEN	GREEN	GREEN	GREEN
26	AMBER	GREEN	GREEN	GREEN
27	AMBER	GREEN	GREEN	GREEN
28	AMBER	GREEN	GREEN	GREEN
29	AMBER	GREEN	GREEN	GREEN
30	AMBER	GREEN	GREEN	GREEN
31	AMBER	GREEN	GREEN	GREEN
32	AMBER	GREEN	GREEN	GREEN
33	AMBER	GREEN	GREEN	GREEN
34	AMBER	GREEN	GREEN	GREEN
35	GREEN	GREEN	GREEN	GREEN
36	AMBER	AMBER	AMBER	AMBER
37	AMBER	AMBER	AMBER	AMBER
38	AMBER	AMBER	AMBER	AMBER
39	AMBER	AMBER	AMBER	AMBER
40	AMBER	AMBER	AMBER	AMBER
41	AMBER	AMBER	AMBER	AMBER
42	AMBER	AMBER	AMBER	AMBER
43	AMBER	AMBER	AMBER	AMBER
44	AMBER	AMBER	AMBER	AMBER
45	AMBER	AMBER	AMBER	AMBER
46	AMBER	AMBER	AMBER	AMBER
47	AMBER	AMBER	AMBER	AMBER
48	AMBER	AMBER	AMBER	AMBER
49	AMBER	AMBER	AMBER	AMBER
50	AMBER	AMBER	AMBER	AMBER
51	AMBER	AMBER	AMBER	AMBER
52	AMBER	AMBER	AMBER	AMBER
53	AMBER	AMBER	AMBER	AMBER
54	AMBER	AMBER	AMBER	AMBER
55	AMBER	AMBER	AMBER	AMBER
56	AMBER	AMBER	AMBER	AMBER
57	AMBER	AMBER	AMBER	AMBER
58	AMBER	AMBER	AMBER	AMBER
59	AMBER	AMBER	AMBER	AMBER
60	AMBER	AMBER	AMBER	AMBER

	Hackney	TH	Carlisle	Ceredigion
Day	Final RAG	Final RAG	Final RAG	Final RAG
1	AMBER	AMBER	AMBER	AMBER
2	AMBER	GREEN	AMBER	GREEN
3	GREEN	GREEN	GREEN	GREEN
4	GREEN	GREEN	GREEN	GREEN
5	GREEN	GREEN	GREEN	GREEN
6	GREEN	GREEN	GREEN	GREEN
7	GREEN	GREEN	GREEN	GREEN
8	GREEN	GREEN	GREEN	GREEN
9	GREEN	GREEN	GREEN	GREEN
10	GREEN	GREEN	GREEN	GREEN
11	GREEN	GREEN	GREEN	GREEN
12	GREEN	GREEN	GREEN	GREEN
13	GREEN	GREEN	GREEN	GREEN
14	GREEN	GREEN	GREEN	GREEN
15	GREEN	GREEN	GREEN	GREEN
16	GREEN	GREEN	GREEN	GREEN
17	GREEN	GREEN	GREEN	GREEN
18	GREEN	GREEN	GREEN	GREEN
19	GREEN	GREEN	GREEN	GREEN
20	GREEN	GREEN	GREEN	GREEN
21	GREEN	GREEN	GREEN	GREEN
22	GREEN	GREEN	GREEN	GREEN
23	GREEN	GREEN	GREEN	GREEN
24	GREEN	GREEN	GREEN	GREEN
25	GREEN	GREEN	GREEN	GREEN
26	AMBER	GREEN	GREEN	GREEN
27	AMBER	GREEN	GREEN	GREEN
28	AMBER	GREEN	GREEN	GREEN
29	AMBER	GREEN	GREEN	GREEN
30	AMBER	GREEN	GREEN	GREEN
31	AMBER	GREEN	GREEN	GREEN
32	AMBER	GREEN	GREEN	GREEN
33	AMBER	GREEN	GREEN	GREEN
34	AMBER	GREEN	GREEN	GREEN
35	GREEN	GREEN	GREEN	GREEN
36	GREEN	GREEN	GREEN	GREEN
37	GREEN	GREEN	GREEN	GREEN
38	GREEN	GREEN	GREEN	GREEN
39	GREEN	GREEN	GREEN	GREEN
40	GREEN	GREEN	GREEN	GREEN
41	GREEN	GREEN	GREEN	GREEN
42	GREEN	GREEN	GREEN	GREEN
43	GREEN	GREEN	GREEN	GREEN
44	GREEN	GREEN	GREEN	GREEN
45	GREEN	GREEN	GREEN	GREEN
46	GREEN	GREEN	GREEN	GREEN
47	GREEN	GREEN	GREEN	GREEN
48	GREEN	GREEN	GREEN	GREEN
49	GREEN	GREEN	GREEN	GREEN
50	GREEN	GREEN	GREEN	GREEN
51	GREEN	GREEN	GREEN	GREEN
52	GREEN	GREEN	GREEN	GREEN
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56	GREEN	GREEN	GREEN	GREEN
57	GREEN	GREEN	GREEN	GREEN
58	GREEN	GREEN	GREEN	GREEN
59	GREEN	GREEN	GREEN	GREEN
60	GREEN	GREEN	GREEN	GREEN

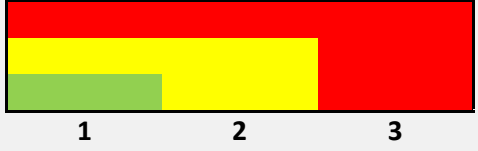
## Annex C – Simulation using constant weights on rehearsal data

Data used	2019 Rehearsal data	2019 Rehearsal data
<b>Thresholds RRD</b>	1: $\geq 0$ 2: $< 0$ and $\geq -5$ 3: $< -5$	1: $\geq 0$ 2: $< 0$ and $\geq -5$ 3: $< -5$
<b>Thresholds V%</b>	1: $\geq 90\%$ 2: $< 90\%$ and $\geq 88\%$ 3: $< 88\%$	1: $\geq 90\%$ 2: $< 90\%$ and $\geq 88\%$ 3: $< 88\%$
<b>Weights</b>	RRD: 0.7 throughout the collection period V%: 0.3 throughout the collection period	RRD: 0.5 throughout the collection period V%: 0.5 throughout the collection period

	Hackney	TH	Carlisle	Ceredigion
Day	Final RAG	Final RAG	Final RAG	Final RAG
1	AMBER	AMBER	AMBER	AMBER
2	AMBER	GREEN	AMBER	GREEN
3	GREEN	GREEN	GREEN	GREEN
4	GREEN	GREEN	GREEN	GREEN
5	GREEN	GREEN	GREEN	GREEN
6	GREEN	GREEN	GREEN	GREEN
7	GREEN	GREEN	GREEN	GREEN
8	GREEN	GREEN	GREEN	GREEN
9	GREEN	GREEN	GREEN	GREEN
10	GREEN	GREEN	GREEN	GREEN
11	GREEN	GREEN	GREEN	GREEN
12	GREEN	GREEN	GREEN	GREEN
13	GREEN	GREEN	GREEN	GREEN
14	GREEN	GREEN	GREEN	GREEN
15	GREEN	GREEN	GREEN	GREEN
16	GREEN	GREEN	GREEN	GREEN
17	GREEN	GREEN	GREEN	GREEN
18	GREEN	GREEN	GREEN	GREEN
19	GREEN	GREEN	GREEN	GREEN
20	GREEN	GREEN	GREEN	GREEN
21	GREEN	GREEN	GREEN	GREEN
22	GREEN	GREEN	GREEN	GREEN
23	GREEN	GREEN	GREEN	GREEN
24	GREEN	GREEN	GREEN	GREEN
25	GREEN	GREEN	GREEN	GREEN
26	AMBER	GREEN	GREEN	GREEN
27	AMBER	GREEN	GREEN	GREEN
28	AMBER	GREEN	GREEN	GREEN
29	AMBER	GREEN	GREEN	GREEN
30	AMBER	GREEN	GREEN	GREEN
31	AMBER	GREEN	GREEN	GREEN
32	AMBER	GREEN	GREEN	GREEN
33	AMBER	GREEN	GREEN	GREEN
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36	GREEN	GREEN	GREEN	GREEN
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45	GREEN	GREEN	GREEN	GREEN
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54	GREEN	GREEN	GREEN	GREEN
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58	GREEN	GREEN	GREEN	GREEN
59	GREEN	GREEN	GREEN	GREEN
60	GREEN	GREEN	GREEN	GREEN

	Hackney	TH	Carlisle	Ceredigion
Day	Final RAG	Final RAG	Final RAG	Final RAG
1	RED	RED	RED	RED
2	RED	AMBER	RED	AMBER
3	AMBER	AMBER	AMBER	AMBER
4	AMBER	AMBER	AMBER	AMBER
5	AMBER	AMBER	AMBER	AMBER
6	AMBER	AMBER	AMBER	AMBER
7	AMBER	AMBER	AMBER	AMBER
8	AMBER	AMBER	AMBER	AMBER
9	AMBER	AMBER	AMBER	AMBER
10	AMBER	AMBER	AMBER	AMBER
11	AMBER	AMBER	AMBER	AMBER
12	AMBER	AMBER	AMBER	AMBER
13	AMBER	AMBER	AMBER	AMBER
14	AMBER	AMBER	AMBER	AMBER
15	AMBER	AMBER	AMBER	AMBER
16	AMBER	AMBER	AMBER	AMBER
17	AMBER	AMBER	AMBER	AMBER
18	AMBER	AMBER	AMBER	AMBER
19	AMBER	AMBER	AMBER	AMBER
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22	AMBER	AMBER	AMBER	AMBER
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25	AMBER	AMBER	AMBER	AMBER
26	RED	AMBER	AMBER	AMBER
27	RED	AMBER	AMBER	AMBER
28	RED	AMBER	AMBER	AMBER
29	RED	AMBER	AMBER	AMBER
30	RED	AMBER	AMBER	AMBER
31	RED	AMBER	AMBER	AMBER
32	RED	AMBER	AMBER	AMBER
33	RED	AMBER	AMBER	AMBER
34	RED	AMBER	AMBER	AMBER
35	AMBER	AMBER	AMBER	AMBER
36	AMBER	AMBER	AMBER	AMBER
37	AMBER	AMBER	AMBER	AMBER
38	AMBER	AMBER	AMBER	AMBER
39	AMBER	AMBER	AMBER	AMBER
40	AMBER	AMBER	AMBER	AMBER
41	AMBER	AMBER	AMBER	AMBER
42	AMBER	AMBER	AMBER	AMBER
43	AMBER	AMBER	AMBER	AMBER
44	AMBER	AMBER	AMBER	AMBER
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51	AMBER	AMBER	AMBER	AMBER
52	AMBER	AMBER	AMBER	AMBER
53	AMBER	AMBER	AMBER	AMBER
54	AMBER	AMBER	AMBER	AMBER
55	AMBER	AMBER	AMBER	AMBER
56	AMBER	AMBER	AMBER	AMBER
57	AMBER	AMBER	AMBER	AMBER
58	AMBER	AMBER	AMBER	AMBER
59	AMBER	AMBER	AMBER	AMBER
60	AMBER	AMBER	AMBER	AMBER

# Annex D – RAG status simulation of approach using risk impact table 1

<i>Data used</i>	<i>2019 Rehearsal data</i>	<i>FOS data (V%) 2019 Rehearsal data (RRD)</i>
<b>Thresholds RRD</b>	1: $\geq 0$ 2: $< 0$ and $\geq -5$ 3: $< -5$	1: $\geq 0$ 2: $< 0$ and $\geq -5$ 3: $< -5$
<b>Thresholds V%</b>	1: $\geq 90\%$ 2: $< 90\%$ and $\geq 88\%$ 3: $< 88\%$	1: $\geq 90\%$ 2: $< 90\%$ and $\geq 88\%$ 3: $< 88\%$
<b>Scoring</b>	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">V%</div> <div style="display: flex; flex-direction: column; align-items: center;"> <span>3</span> <span>2</span> <span>1</span> </div> </div>  <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>1</span> <span>2</span> <span>3</span> </div> <div style="text-align: center; margin-top: 5px;">RRD</div>	

Using a risk/impact table where different combinations of the two scores give different RAG statuses

Day	Hackney	TH	Carlisle	Ceredigion	Day	Hackney	TH	Carlisle	Ceredigion
	Final RAG	Final RAG	Final RAG	Final RAG		Final RAG	Final RAG	Final RAG	Final RAG
1	RED	RED	RED	RED	1	RED	RED	RED	RED
2	RED	RED	RED	RED	2	RED	RED	RED	RED
3	RED	RED	RED	RED	3	RED	RED	RED	RED
4	RED	RED	RED	RED	4	RED	RED	RED	RED
5	RED	RED	RED	RED	5	RED	RED	RED	RED
6	RED	RED	RED	RED	6	RED	RED	RED	RED
7	RED	RED	RED	RED	7	RED	RED	RED	RED
8	RED	RED	RED	RED	8	RED	RED	RED	RED
9	RED	RED	RED	RED	9	RED	RED	RED	RED
10	RED	RED	RED	RED	10	RED	RED	RED	RED
11	RED	RED	RED	RED	11	RED	RED	RED	RED
12	RED	RED	RED	RED	12	RED	RED	RED	RED
13	RED	RED	RED	RED	13	RED	RED	RED	RED
14	RED	RED	RED	RED	14	RED	RED	RED	RED
15	RED	RED	RED	RED	15	RED	RED	RED	RED
16	RED	RED	RED	RED	16	RED	RED	RED	RED
17	RED	RED	RED	RED	17	RED	RED	RED	RED
18	RED	RED	RED	RED	18	RED	AMBER	RED	RED
19	RED	RED	RED	RED	19	RED	GREEN	AMBER	RED
20	RED	RED	RED	RED	20	GREEN	GREEN	AMBER	RED
21	RED	RED	RED	RED	21	GREEN	GREEN	GREEN	RED
22	RED	RED	RED	RED	22	GREEN	GREEN	GREEN	RED
23	RED	RED	RED	RED	23	GREEN	GREEN	GREEN	AMBER
24	RED	RED	RED	RED	24	GREEN	GREEN	GREEN	AMBER
25	RED	RED	RED	RED	25	GREEN	GREEN	GREEN	RED
26	RED	RED	RED	RED	26	AMBER	GREEN	GREEN	AMBER
27	RED	RED	RED	RED	27	AMBER	GREEN	GREEN	AMBER
28	RED	RED	RED	RED	28	AMBER	GREEN	GREEN	AMBER
29	RED	RED	RED	RED	29	AMBER	GREEN	GREEN	AMBER
30	RED	RED	RED	RED	30	AMBER	GREEN	GREEN	AMBER
31	RED	RED	RED	RED	31	AMBER	GREEN	GREEN	AMBER
32	RED	RED	RED	RED	32	AMBER	GREEN	GREEN	GREEN
33	RED	RED	RED	RED	33	AMBER	GREEN	GREEN	GREEN
34	RED	RED	RED	RED	34	AMBER	GREEN	GREEN	GREEN
35	RED	RED	RED	RED	35	GREEN	GREEN	GREEN	GREEN
36	RED	RED	RED	RED	36	GREEN	GREEN	GREEN	GREEN
37	RED	RED	RED	RED	37	GREEN	GREEN	GREEN	GREEN
38	RED	RED	RED	RED	38	GREEN	GREEN	GREEN	GREEN
39	RED	RED	RED	RED	39	GREEN	GREEN	GREEN	GREEN
40	RED	RED	RED	RED	40	GREEN	GREEN	GREEN	GREEN
41	RED	RED	RED	RED	41	GREEN	GREEN	GREEN	GREEN
42	RED	RED	RED	RED	42	GREEN	GREEN	GREEN	GREEN
43	RED	RED	RED	RED	43	GREEN	GREEN	GREEN	GREEN
44	RED	RED	RED	RED	44	GREEN	GREEN	GREEN	GREEN
45	RED	RED	RED	RED	45	GREEN	GREEN	GREEN	GREEN
46	RED	RED	RED	RED	46	GREEN	GREEN	GREEN	GREEN
47	RED	RED	RED	RED	47	GREEN	GREEN	GREEN	GREEN
48	RED	RED	RED	RED	48	GREEN	GREEN	GREEN	GREEN
49	RED	RED	RED	RED	49	GREEN	GREEN	GREEN	GREEN
50	RED	RED	RED	RED	50	GREEN	GREEN	GREEN	GREEN
51	RED	RED	RED	RED	51	GREEN	GREEN	GREEN	GREEN
52	RED	RED	RED	RED	52	GREEN	GREEN	GREEN	GREEN
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56	RED	RED	RED	RED	56	GREEN	GREEN	GREEN	GREEN
57	RED	RED	RED	RED	57	GREEN	GREEN	GREEN	GREEN
58	RED	RED	RED	RED	58	GREEN	GREEN	GREEN	GREEN
59	RED	RED	RED	RED	59	GREEN	GREEN	GREEN	GREEN
60	RED	RED	RED	RED	60	GREEN	GREEN	GREEN	GREEN

## Annex E – RAG status simulation using risk impact table 2

Data used	2019 Rehearsal data	FOS data (V%) 2019 Rehearsal data (RRD)																		
<b>Thresholds RRD</b>	1: $\geq 0$ 2: $< 0$ and $\geq -5$ 3: $< -5$	1: $\geq 0$ 2: $< 0$ and $\geq -5$ 3: $< -5$																		
<b>Thresholds V%</b>	1: $\geq 90\%$ 2: $< 90\%$ and $\geq 88\%$ 3: $< 88\%$	1: $\geq 90\%$ 2: $< 90\%$ and $\geq 88\%$ 3: $< 88\%$																		
<b>Scoring</b>	<table border="1"> <tr> <td>V%</td> <td>3</td> <td colspan="2" rowspan="3"> </td> </tr> <tr> <td></td> <td>2</td> </tr> <tr> <td></td> <td>1</td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td></td> <td></td> <td colspan="3" style="text-align: center;">RRD</td> </tr> </table>	V%	3				2		1			1	2	3			RRD			
V%	3																			
	2																			
	1																			
		1	2	3																
		RRD																		
	Using a risk/impact table where different combinations of the two scores give different RAG statuses																			

	Hackney	TH	Carlisle	Ceredigion
Day	Final RAG	Final RAG	Final RAG	Final RAG
1	AMBER	AMBER	AMBER	AMBER
2	AMBER	AMBER	AMBER	AMBER
3	AMBER	AMBER	AMBER	AMBER
4	AMBER	AMBER	AMBER	AMBER
5	AMBER	AMBER	AMBER	AMBER
6	AMBER	AMBER	AMBER	AMBER
7	AMBER	AMBER	AMBER	AMBER
8	AMBER	AMBER	AMBER	AMBER
9	AMBER	AMBER	AMBER	AMBER
10	AMBER	AMBER	AMBER	AMBER
11	AMBER	AMBER	AMBER	AMBER
12	AMBER	AMBER	AMBER	AMBER
13	AMBER	AMBER	AMBER	AMBER
14	AMBER	AMBER	AMBER	AMBER
15	AMBER	AMBER	AMBER	AMBER
16	AMBER	AMBER	AMBER	AMBER
17	AMBER	AMBER	AMBER	AMBER
18	AMBER	AMBER	AMBER	AMBER
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23	AMBER	AMBER	AMBER	AMBER
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26	AMBER	AMBER	AMBER	AMBER
27	AMBER	AMBER	AMBER	AMBER
28	AMBER	AMBER	AMBER	AMBER
29	AMBER	AMBER	AMBER	AMBER
30	AMBER	AMBER	AMBER	AMBER
31	AMBER	AMBER	AMBER	AMBER
32	AMBER	AMBER	AMBER	AMBER
33	AMBER	AMBER	AMBER	AMBER
34	AMBER	AMBER	AMBER	AMBER
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36	AMBER	AMBER	AMBER	AMBER
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41	AMBER	AMBER	AMBER	AMBER
42	AMBER	AMBER	AMBER	AMBER
43	AMBER	AMBER	AMBER	AMBER
44	AMBER	AMBER	AMBER	AMBER
45	AMBER	AMBER	AMBER	AMBER
46	AMBER	AMBER	AMBER	AMBER
47	AMBER	AMBER	AMBER	AMBER
48	AMBER	AMBER	AMBER	AMBER
49	AMBER	AMBER	AMBER	AMBER
50	AMBER	AMBER	AMBER	AMBER
51	AMBER	AMBER	AMBER	AMBER
52	AMBER	AMBER	AMBER	AMBER
53	AMBER	AMBER	AMBER	AMBER
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56	AMBER	AMBER	AMBER	AMBER
57	AMBER	AMBER	AMBER	AMBER
58	AMBER	AMBER	AMBER	AMBER
59	AMBER	AMBER	AMBER	AMBER
60	AMBER	AMBER	AMBER	AMBER

	Hackney	TH	Carlisle	Ceredigion
Day	Final RAG	Final RAG	Final RAG	Final RAG
1	AMBER	AMBER	AMBER	AMBER
2	AMBER	AMBER	AMBER	AMBER
3	AMBER	AMBER	AMBER	AMBER
4	AMBER	AMBER	AMBER	AMBER
5	AMBER	AMBER	AMBER	AMBER
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7	AMBER	AMBER	AMBER	AMBER
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16	AMBER	AMBER	AMBER	AMBER
17	AMBER	AMBER	AMBER	AMBER
18	AMBER	GREEN	AMBER	AMBER
19	AMBER	GREEN	GREEN	AMBER
20	GREEN	GREEN	GREEN	AMBER
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31	GREEN	GREEN	GREEN	GREEN
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34	GREEN	GREEN	GREEN	GREEN
35	GREEN	GREEN	GREEN	GREEN
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37	GREEN	GREEN	GREEN	GREEN
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42	GREEN	GREEN	GREEN	GREEN
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49	GREEN	GREEN	GREEN	GREEN
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51	GREEN	GREEN	GREEN	GREEN
52	GREEN	GREEN	GREEN	GREEN
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58	GREEN	GREEN	GREEN	GREEN
59	GREEN	GREEN	GREEN	GREEN
60	GREEN	GREEN	GREEN	GREEN

## Annex F – 2019 RCA Dashboard maps with RAG status

