Data Communications Company

Switching Change Proposal: SLAs & Exclusions

R0092 – Workshop 3

We believe in making Britain more connected, so we can all lead smarter, greener lives.

July 2023

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Overview

Following the successful go-live of the Switching Service, and subsequent understanding of user and system behaviour, DCC initiated a REC Change Proposal (R0092) to align the Switching SLAs (originally defined early in the design process) with this real-world behaviour.

The following slides give context and specific suggestions of how these SLAs could be changed to enable an accurate and tangible measurement of the performance levels in the areas outlined below.

DCC welcomes the opportunity to discuss and refine these suggestions with the appropriate interested parties.

Category	Metric	Service Definition Ref.
CSS Message Targets	Synchronous Messages	CSS 6.1
	Asynchronous Messages	CSS 6.2
	Gate Closure	CSS 6.3
Incident Management Targets	CSS (Landmark) Incidents	CSS 5.2
	ERDS Incidents	ERDS 6.2
	GRDS Incidents	GRDS 6.2
	SO (DCC) Incidents	SO 5.2
	SO (DCC) Service Requests	SO 5.4
Performance Measurement Exclusions	Relevant to all areas	

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Actions (1/2) 1st Workshop

Action Ref	Action	Action Update
1506_01	The Code Manager to reconcile any differences identified through proceedings of the R0092 workgroup between the REC obligations and performance assurance reporting.	Action is ongoing.
1506_02	The DCC to confirm the required timescales to process synchronous and asynchronous responses during peak demand volumes.	Closed
1506_03	The DCC to confirm how long in-hour scaling processes takes to account for unexpected peak volumes.	Closed
1506_04	The DCC to produce a slide demonstrating the dependencies on user response versus dependencies on the DCC to complete processes regarding gate closure.	Closed
1506_05	LB to provide data on open incidents, their associated priority categories, volumes and any on hold.	Closed

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Actions (2/2) 2nd Workshop

Action Ref	Action	Action Update
2906_01	DCC to provide an explanation on why there was a wider distribution of mean hourly response times at lower volumes within the May data for asynchronous messages.	Propose to close. Please see slide 5
2906_02	DCC to provide the number of times the service needed to scale over 8 instances in May for inbound messages and excluding gate closure.	Propose to close. Please see slide 6
2906_03	DCC to request information from Landmark on how long the acknowledgement time out period is.	Propose to close. Please see slide 7
2906_04	DCC to provide data on inbound tickets as opposed to proactively raised incidents from Landmark.	Propose to close. Please see slide 8

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2906_01 – Why do lower-volume hours have a wider distribution of mean Response times?

Action 2906_01: DCC to provide an explanation on why there was a wider distribution of mean hourly response times at lower volumes within the May data for asynchronous messages.

This is due to statistical maths!

A response time to any message has a range of potential values. Most will cluster around a mean value – but there will be a few outliers with higher or lower times.

When there are many events (messages) in an hour, the contribution of these outliers to the overall mean time is reduced.

But when there are only a few messages, these outliers can have a significant influence on the overall mean.

E.g. Hour A has 1000 messages. 999 messages have a response time of 1 second, 1 message has a response time of 10 seconds.

Hourly Mean = Total Time For All Messages / Number of Messages = ([999 x 1] + [1 x 10]) / 1000 = **1.009** seconds.

→ The hourly mean is very close to the median time of 1 second. The 10-second outlier has made a negligible difference.

E.g. Hour B has 10 messages. 9 messages have a response time of 1 second, 1 message has a response time of 10 seconds.

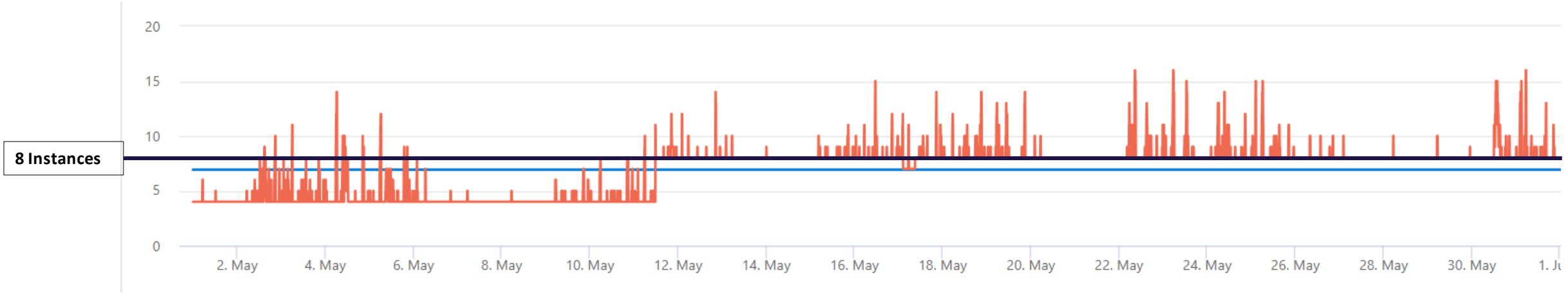
Hourly Mean = ([9 x 1] + [1 x10]) / 10 = **1.9** seconds.

→ The hourly mean is nearly twice the median time of 1 second. The 10-second outlier has made a significant difference.

2906_02 – The Number of Inbound Async Instances

Action 2906_02: DCC to provide the number of times the service needed to scale over 8 instances in May for inbound messages and excluding gate closure.

Scaling is dynamic and changes with demand. We've sampled the month of May at 5-minute intervals.



There were 163 separate occasions where the number of instances scaled above 8.
The highest was 16, which occurred 3 separate times:

- 22nd at 09:40 (18,342 messages during a 10-minute period)
- 23rd at 06:30 (16,781 messages during a 10-minute period)
- 31st at 06:25 (13,823 messages during a 10-minute period)

2906_03 – Acknowledgement Timeout

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Action 2906_03: DCC to request information from Landmark on how long the acknowledgement time out period is.

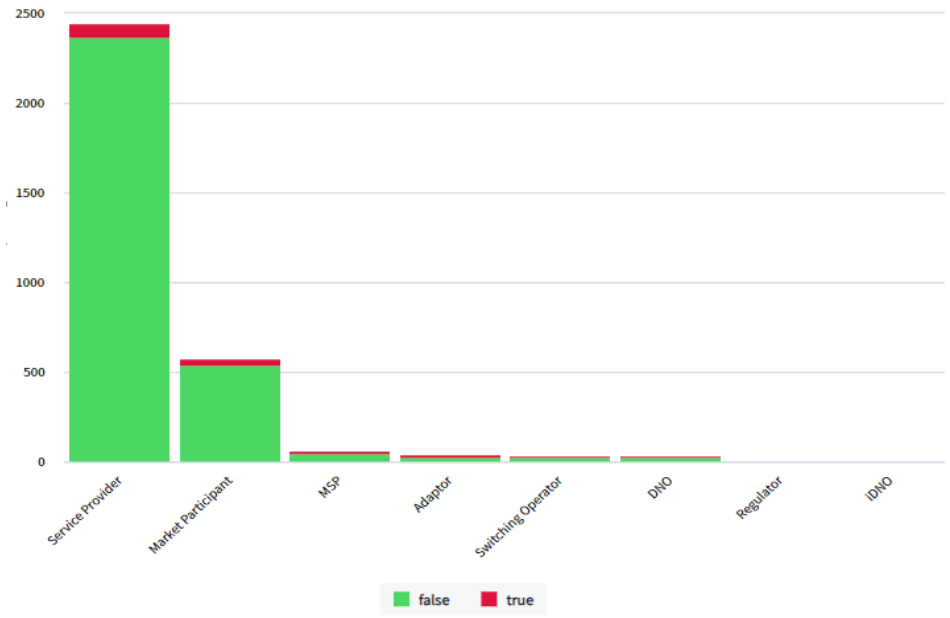
The Timeout value is set to 100 seconds, with a 20-second Retry interval.

This means that if an Acknowledgement is not received from the first attempt to send the message after 100 seconds has elapsed, the system will add a retry to the queue to be sent after 20 seconds.

This is repeated 2 additional times, and if still no response, the back-off strategy is implemented (12 additional attempts at 1 hour intervals).

2906_04 - DCC to provide data on inbound tickets as opposed to proactively raised incidents from Landmark

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Caller Company Type Totals	CSS SLA Reporting Count Totals	Percentage of Count
Service Provider Total	2,448	76.45%
Market Participant Total	574	17.93%
MSP Total	62	1.94%
Adaptor Total	38	1.19%
Switching Operator Total	35	1.09%
DNO Total	33	1.03%
Regulator Total	8	0.25%
iDNO Total	4	0.12%

Service Provider	false	2,372	96.9%
	true	76	3.1%
Market Participant	false	543	94.6%
	true	31	5.4%
MSP	false	47	75.81%
	true	15	24.19%
Adaptor	false	29	76.32%
	true	9	23.68%
Switching Operator	false	24	68.57%
	true	11	31.43%
DNO	false	28	84.85%
	true	5	15.15%
Regulator	false	7	87.5%
	true	1	12.5%
iDNO	false	4	100%
Total		3,202	100%

Considerations/Key Stats:

- 76.45% of incidents in the last 3 months were raised by CSS
- True = breach of SLA as shown in green and red
- Shown Data is a reflection of the last 3 months.
- In this presentation "switching operator" is the DCC Desk
- SO SLA's are not on inbound incidents only nor are we suggesting they should be.
- 58% of incidents raised by parties were related to CSS messages and 9% data validation errors