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Schedule 6.3 – ESMCP Mobile Services Agreement Coverage Benchmarking and Validation Process

Version 1.0

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CHANGE HISTORY

Version No.	Effective Date of agreement / CAN	Version / Details of Changes included in Update	Author(s)
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1 Coverage Benchmarking and Validation Principles

- 1.1 The MS Supplier will create and provide Coverage baselines derived from crowd source data that will provide an expectation of Coverage outcome for Mobile Communications Services ("**Coverage Baseline**"). The detail of how the Coverage Baseline is calculated is outlined in Paragraphs 2 and 3 below, and the process for the Supplier's annual refresh of the Coverage Baseline is detailed in Paragraph 4.
- 1.2 The Parties agree that the initial Coverage Baselines for Marine Coverage and A2G Coverage shall not be derived from crowd source data.
- 1.3 The MS Supplier will support a process that enables the Authority to challenge the Coverage Baseline, or Coverage Rebaseline, should it be suspected that the service based outcome for Mobile Communications Services is below or falls below the Parties agreed initial expectations. The detail of how the Authority may challenge the Coverage Baseline or Coverage Rebaseline is outlined in Paragraph 5 below.
- 1.4 The MS Supplier will deliver a process that enables the collection of accurate End to End Service detail about the Mobile Communications Services in any location upon which there is a challenge referred to in Paragraph 1.3. The detail will be collected through MS Supplier Testing at locations under challenge. The Methodology for MS Supplier Testing is outlined in Paragraphs 6, 7 and 8 below.
- 1.5 The MS Supplier will undertake a Supplier Fix where such a Supplier Fix is identified through the processes set out in Paragraph 10 below.

2 Establishment of Coverage Baseline

- 2.1 The Coverage Baseline will indicate the expected presence or absence of usable Coverage appropriate to the following specific ESN Service types:
- (a) Vehicle Coverage on contracted Major Roads, Minor Roads and Other Roads within ESN GB Roadset. [REDACTED]
 - (b) Outdoor Handheld Coverage on contracted Major Roads, Minor Roads and Other Roads within the ESN GB Roadset. [REDACTED]
 - (c) Outdoor Handheld Coverage off roads within ESN Outdoor Handheld Coverage End State prediction area. [REDACTED]
 - (d) Indoor Handheld Coverage within a location contracted via Annex E Locations, Authority Special Coverage Site, or the CELs process. [REDACTED]
 - (e) Outdoor Handheld Coverage on or off roads identified within the requirement area of a CEL. This baseline will be established from the post deployment report contained within the appropriate location Handover Pack;
 - (f) Vehicle Coverage on non-contracted roads identified within the requirement area of a CEL. [REDACTED]

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- (g) for Marine Coverage, predictions shall provide the default Coverage Baseline, provided that the Authority and the MS Supplier agree that the relevant predictions are reliable.

[REDACTED]

- (h) for G2A and A2G Coverage, predictions shall provide the default Coverage Baseline providing the Authority and the MS Supplier agree that the relevant predictions are reliable.

[REDACTED]

2.2

[REDACTED]

- 2.3 The Parties agree that as part of any annual Coverage Rebaseline activity, the Coverage Baselines described in Paragraph 2.1(e) and (f) can be subsumed into the Coverage Baselines identified in Paragraph 2.1(a), (b), or (c), as appropriate.

- 2.4 Inbuilding Coverage that the MS Supplier has not been specifically contracted to provide to the Authority through CEL, Annex E Locations or Authority Special Coverage Sites will be treated as Incidental Coverage and will not be subject to the principles outlined in this Schedule 6.3 (Coverage Benchmarking and Validation Process) or any Service Management obligations (such as availability, performance, or incident management targets), except where the Supplier has been contracted to provide Coverage via Permanent Coverage Enhancements as described in Paragraph 12 of Schedule 2.1 (Services Description). For illustration purposes only incidental inbuilding Coverage may include:

- (a) dedicated inbuilding Coverage that has been deployed for non-ESN purposes: If the Coverage is lost from such a solution, then the Supplier has no obligation under this Agreement to restore that Coverage and it will not be treated as an ESN impacting incident; or
- (b) Coverage from a Site that is providing Vehicle Coverage and Outdoor Handheld Coverage which also provides Inbuilding Coverage e.g., in a typical house: If the Coverage is lost from this site the MS Supplier only has an obligation to restore Vehicle Coverage and Outdoor Handheld Coverage and any incident will be considered resolved when the Vehicle Coverage and Outdoor Handheld Coverage is recovered.

- 2.5 The MS Supplier will make the Coverage Baselines available via the Coverage Portal or post integration reports as part of the Handover Pack for CEL, Annex E Locations or for Authority Special Coverage Sites, as appropriate.

- 2.6 The initial Coverage Baselines for Vehicle Coverage and Outdoor Handheld Coverage will be generated on the first November following the Effective Date and will utilise crowd sourced data from the three months immediately preceding the initial Coverage Baseline. An interim view shall be provided sooner after contract signature, but it will not form a Coverage Baseline.

- 2.7 Interim data refreshes for Vehicle Coverage and Outdoor Handheld Coverage for information and Authority tracking purposes will occur at three (3) month intervals utilising the latest three (3) months of crowd source data (based on calendar month quarters).

- 2.8 The Coverage Rebaseline for Vehicle Coverage and Outdoor Handheld Coverage will occur on an annual basis as described in Paragraph 4 of this Schedule 6.3 (Coverage Benchmarking and Validation Process).

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- 2.9 The Coverage Rebaseline for CELs or Annex E Locations or Authority Special Coverage Sites shall only occur following a design or deployment change that is either outside of the Supplier's control or approved by the Authority.

3 Identification of usable Vehicle Coverage and Outdoor Handheld Coverage

- 3.1 The Coverage Portal will reflect the Coverage Baseline utilising [REDACTED] indicating the presence or absence of usable Coverage.

3.2 [REDACTED]

3.3 [REDACTED]

- 3.4 The MS Supplier will provide and agree with the Authority the following:

- (a) the appropriate pixel sample count thresholds required to qualify in each frequency band; and
- (b) the appropriate pixel median power level threshold per band for Vehicle Coverage on Major Roads and Vehicle Coverage on Minor Roads and Outdoor Handheld Coverage respectively.

The values agreed by the MS Supplier and the Authority as indicated in this Paragraph 3.4 are recorded in Annex B to this Schedule 6.3 (Coverage Benchmarking and Validation Process).

- 3.5 Utilising the Coverage Portal, the Supplier will [REDACTED] according to the following steps:

(a) [REDACTED]

(b) [REDACTED]

(c) [REDACTED]

3.6 [REDACTED]

4 Identifying and reporting on change in the Coverage Baseline

- 4.1 Each November during the Term, in conjunction with the Ordnance Survey's update to the OSOR® (Ordnance Survey Open Roads) dataset, the Supplier shall recalculate the Coverage Baseline ("Coverage Rebaseline").

- 4.2 [REDACTED], and will incorporate any changes in Coverage and changes to the ESN GB Roadset as a result of the update to the OSOR® (Ordnance Survey Open Roads) dataset.

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4.3 The MS Supplier will compare the Coverage Rebaseline to the previous year's Coverage Baseline and will provide a report to the Authority detailing [REDACTED]

(a) [REDACTED]

(b) [REDACTED]

[REDACTED] Where the Authority, acting reasonably, does not approve the Supplier's Coverage Rebaseline, the Parties shall continue to use the previous version of the Coverage Baseline.

4.4 The Supplier will investigate all instances of changes shown in the Coverage Rebaseline outlined in Paragraph 4.3 following the process set out in Annex D to this Schedule 6.3.

4.5 Where both Parties agree that sufficient reliable crowdsource data is shown to exist upon Outdoor Handheld Coverage areas within CEL or Annex E Locations or Authority Special Coverage Sites or Road sections within CEL or Annex E Locations or Authority Special Coverage Sites, or on specific Marine routes, then as part of the Coverage Rebaseline process, the format of the baselining source as outlined in Paragraphs 2.1 and 2.2 can be amended for those specific locations.

4.6 [REDACTED]

5 Poor service based performance contradicting expectation of viable Mobile Communication Services

5.1 The MS Supplier will [REDACTED]

5.2 The MS Supplier will triage and investigate all instances of poor service performance reported via a Service Incident in CEL or Annex E Locations or Authority Special Coverage Sites where expectation of viable Mobile Communications Services for that location was reported in a CEL or Annex E Locations or Authority Special Coverage Site post deployment report as set out in the Handover Pack.

5.3 The Coverage investigation process applicable after the US Supplier's Service Desk is live is as follows (for the avoidance of doubt, use of the term "User Organisation" in the below process flow includes the Authority):

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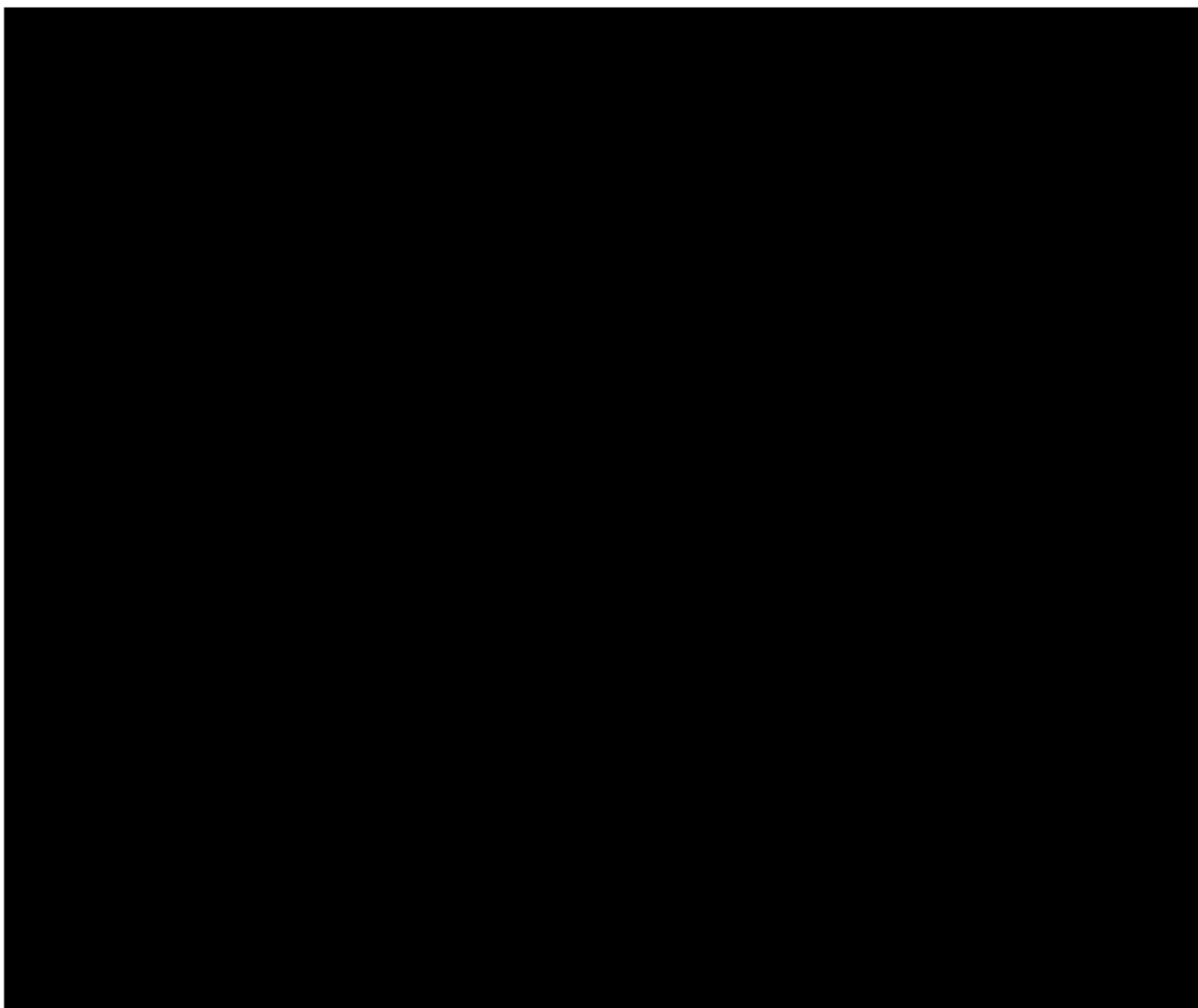
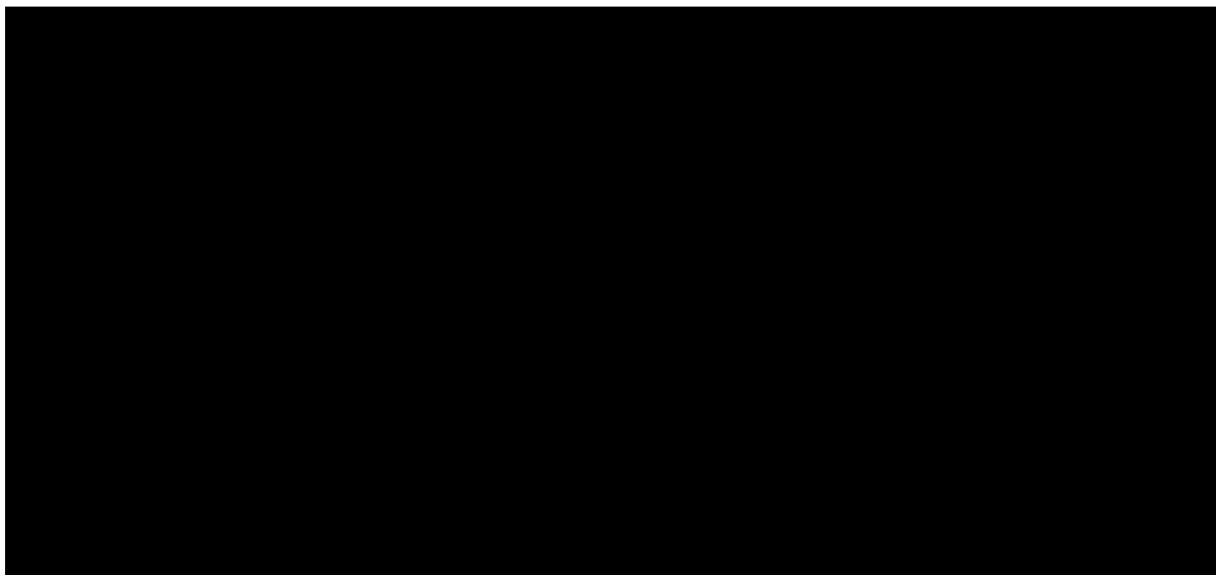
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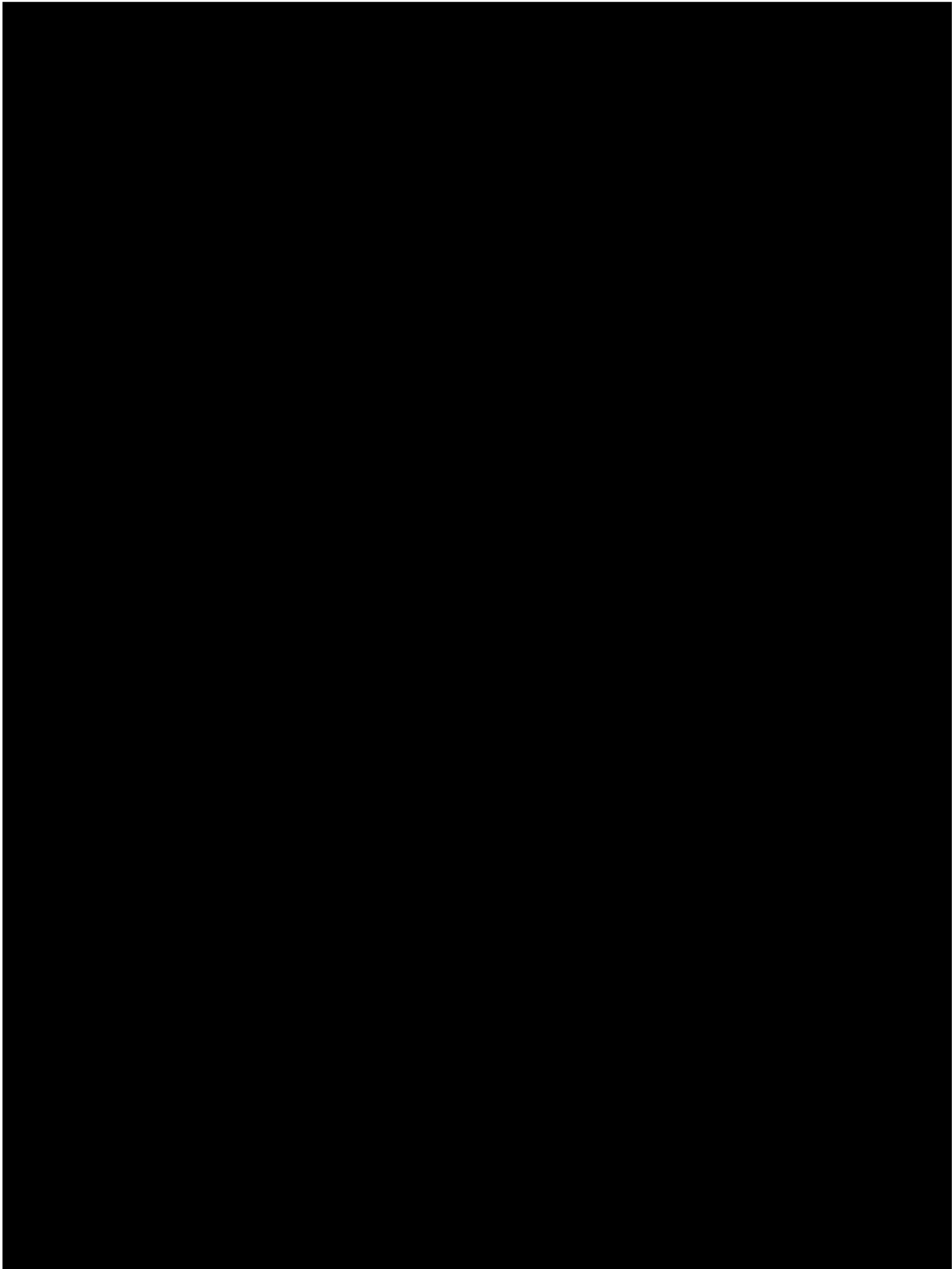
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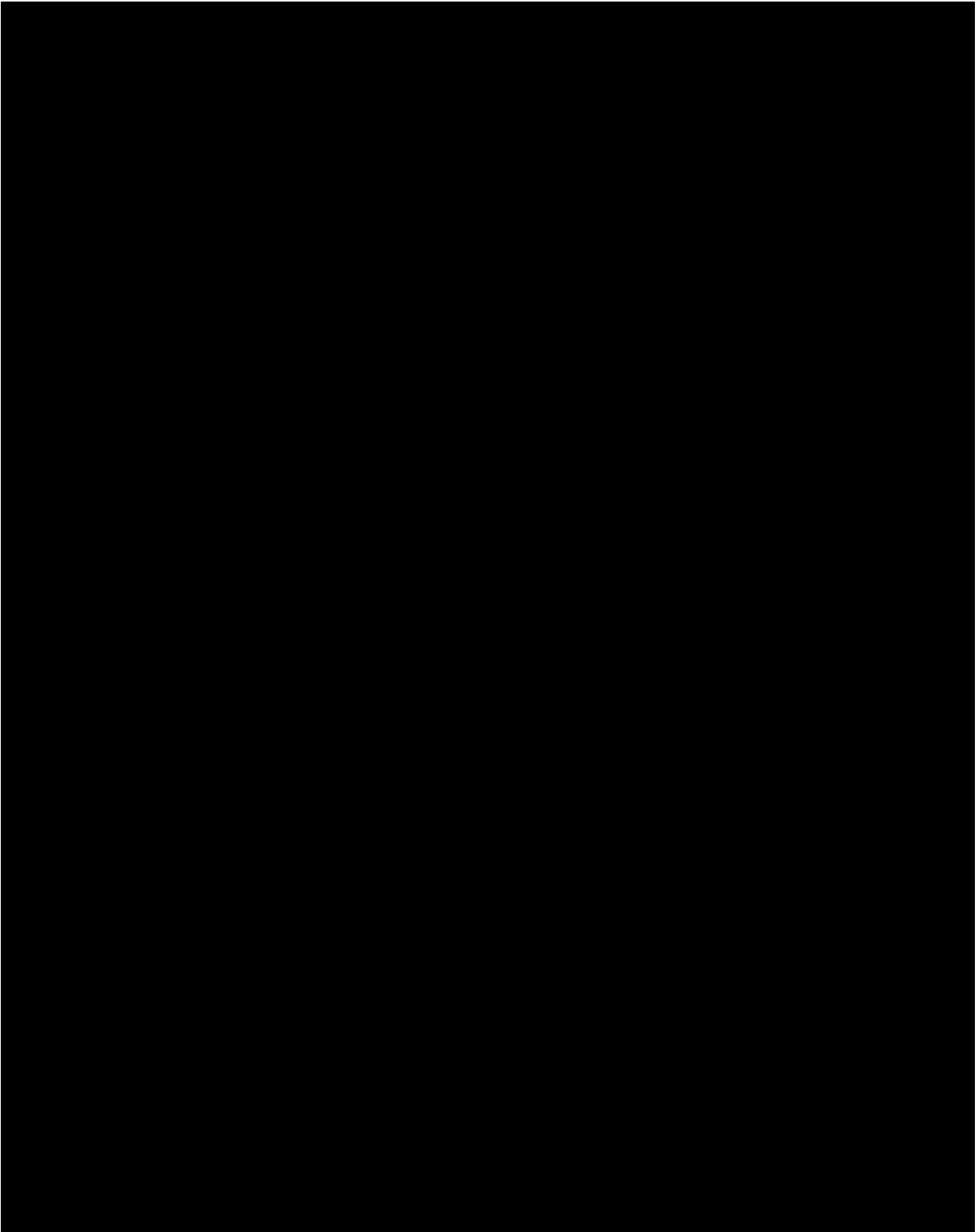
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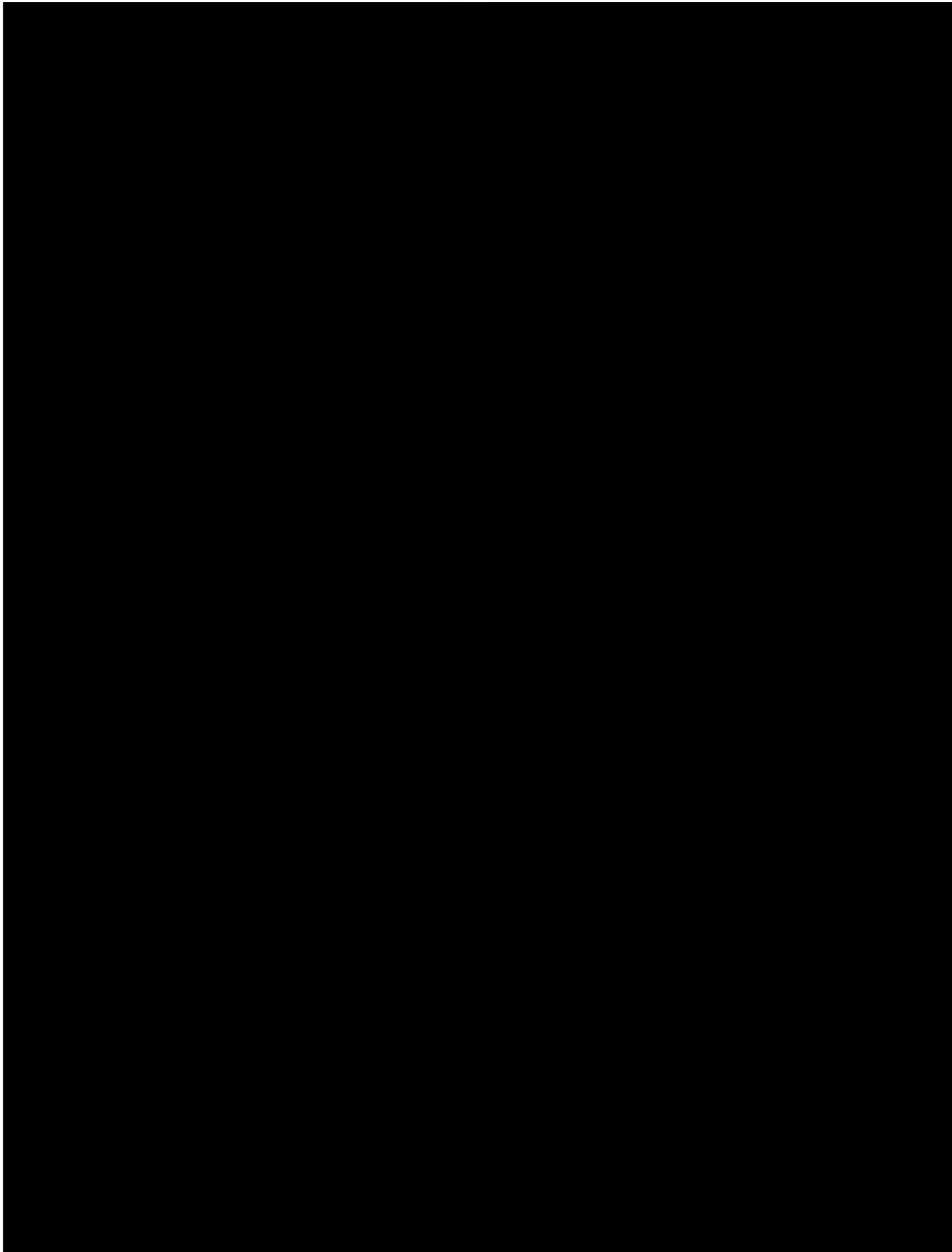
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6 MS Supplier Testing against Coverage Baselines

- 6.1 The MS Supplier will perform ESN Drive Testing or walk testing as appropriate to collect the necessary information to identify if a Supplier Fix is required in the following cases:
- (a) where additional or more detailed data is required to understand the reasons for instances of changes shown in the Coverage Rebaseline outlined in Paragraph 4.3; or
 - (b) to gather more information, if required, to support the investigation of issues reported at a contracted Coverage location outlined in Paragraph 5 using the processes described in Paragraphs 5.3 and 5.4 above.
- 6.2 The MS Supplier test capability will visit those road sections or subdivisions of CEL or Annex E Locations or Authority Special Coverage Sites that are identified for testing in Paragraph 5.

7 MS Supplier Test Configurations

- 7.1 [REDACTED]
- (a) [REDACTED]
 - (b) [REDACTED]
 - (c) [REDACTED]
 - (d) [REDACTED]
- 7.2 The MS Supplier test capability will utilise equipment configurations that conform with Annex G of Schedule 2.1 (Service Description) and which are appropriate for testing of Vehicle Coverage or Outdoor or Indoor Handheld Services. Where the Supplier is required to use User Devices these will be configured in accordance with Annex G of Schedule 2.1 (Service Description).
- 7.3 [REDACTED]
- 7.4 Not used.
- 7.5 [REDACTED]
- (a) [REDACTED]
 - (b) [REDACTED]
 - (c) [REDACTED]
 - (d) [REDACTED]
 - (e) [REDACTED]
 - (f) [REDACTED]

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- (g) [REDACTED]
- (h) [REDACTED]
- (i) [REDACTED]
- (j) [REDACTED]
- (k) [REDACTED]
- (l) [REDACTED]

7.6 The MS Supplier ESN Drive Testing capability will utilise [REDACTED]
The indicative setup of the ESN Test devices is shown in Annex A of this Schedule 6.3 (Coverage Benchmarking and Validation Process).

7.7 The MS Supplier walk Test capability will utilise [REDACTED] The indicative setup of the ESN Test devices is shown in Annex A of this Schedule 6.3 (Coverage Benchmarking and Validation Process).

8 MS Supplier Test Execution / sample density outline

- 8.1 [REDACTED]
- 8.2 [REDACTED]
- 8.3 [REDACTED]
 - (a) [REDACTED]
 - (b) [REDACTED]
- 8.4 [REDACTED]
- 8.5 [REDACTED]
- 8.6 [REDACTED]
- 8.7 [REDACTED]

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9 Additional Coverage benchmarking and validation activities

9.1 The MS Supplier shall provide additional ongoing assurance by undertaking the following services:

- (a) Benchmarking of Coverage: to provide assurance that the performance of the network is remaining consistent over time. Benchmarking does not apply to CELs;
- (b) Vertical Verification: to provide assurance that the performance of MCX using the PSCS application is remaining consistent over time; and
- (c) Optimisation: to make use of available features once the US Supplier has delivered the PSCS application (including associated services) to continuously improve the performance of the MS Network and User experience of MCX using the PSCS application.

The MS Supplier shall ensure that when the test vehicle is not performing activities related to Paragraphs 6.1(a), 6.1(b), 9.1(b) or 9.1(c) that it is engaged in ongoing Benchmarking.

9.2 Benchmarking will perform Voice Quality testing on agreed wide area drive routes.

9.3 Benchmarking will utilise the same vehicle configurations and activity as outlined in Paragraphs 7.2 to 7.6.

9.4 Benchmarking will

9.5

9.6 The MS Supplier will maintain and manage the activity plan for the ESN Drive Testing vehicles and inform the Authority of any changes.

10 How Supplier Fix is identified

10.1 For each road section identified for testing in Paragraph 5, the MS Supplier

(a)

(b)

10.2 For the floor (in accordance with Paragraph 13.2.7 of Schedule 2.1 for an indoor CEL) or outdoor area at CELs identified for Testing in Paragraph 5.

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(a) [REDACTED]

(b) [REDACTED]

10.3 [REDACTED]

(a) [REDACTED]

(b) [REDACTED]

10.4 [REDACTED]

10.5 [REDACTED]

(a) [REDACTED]

(b) [REDACTED]

(c) [REDACTED]

All removals of impacted samples from the distribution must be agreed with the Authority.

10.6 Where a Supplier Fix is identified in accordance with Paragraphs 10.1, 10.2, and 10.3, the Supplier shall be required to resolve and perform a Supplier Fix in accordance with the process set out in Annex E of this Schedule 6.3.

10.7 Notwithstanding the Supplier Fix process set out in Annex E of this Schedule 6.3, and subject to Paragraphs 3.1.10, 3.1.11 and 3.1.12 of Schedule 2.1 (Service Description), [REDACTED]

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11 Timing of ESN Drive Testing

11.1



12 Data Sharing

- 12.1 The MS Supplier will make available to the Authority all details related to the planning and management of Test drive activity and all raw and post processed results collected in those activities.

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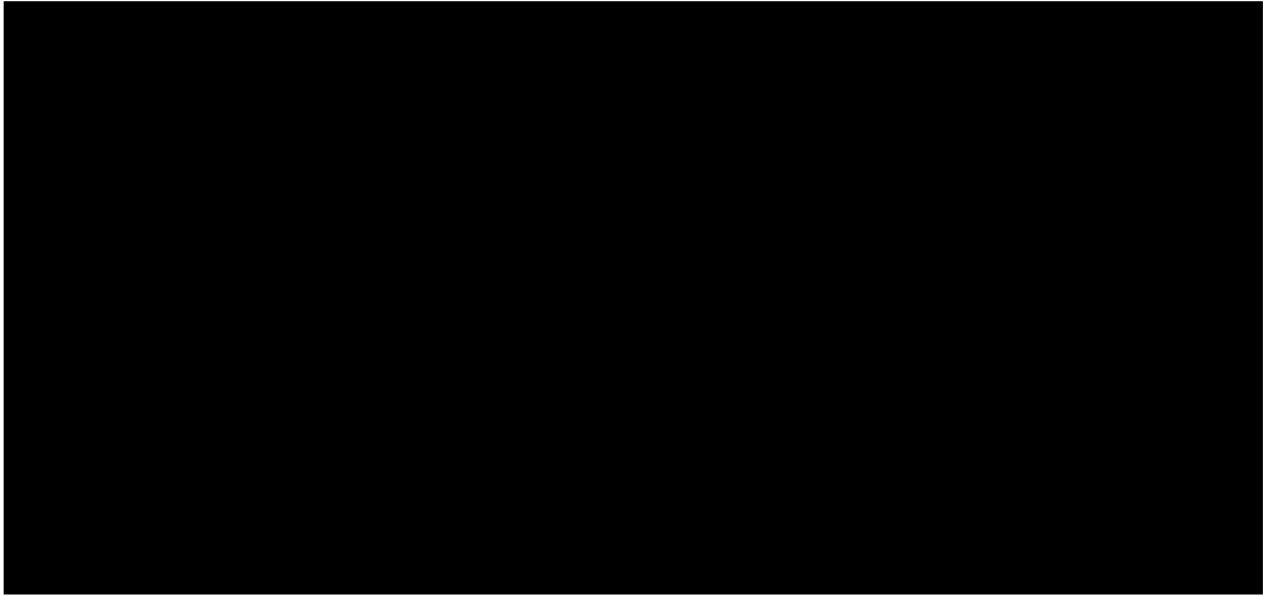
Annex A: Example of ESN Test vehicle setup

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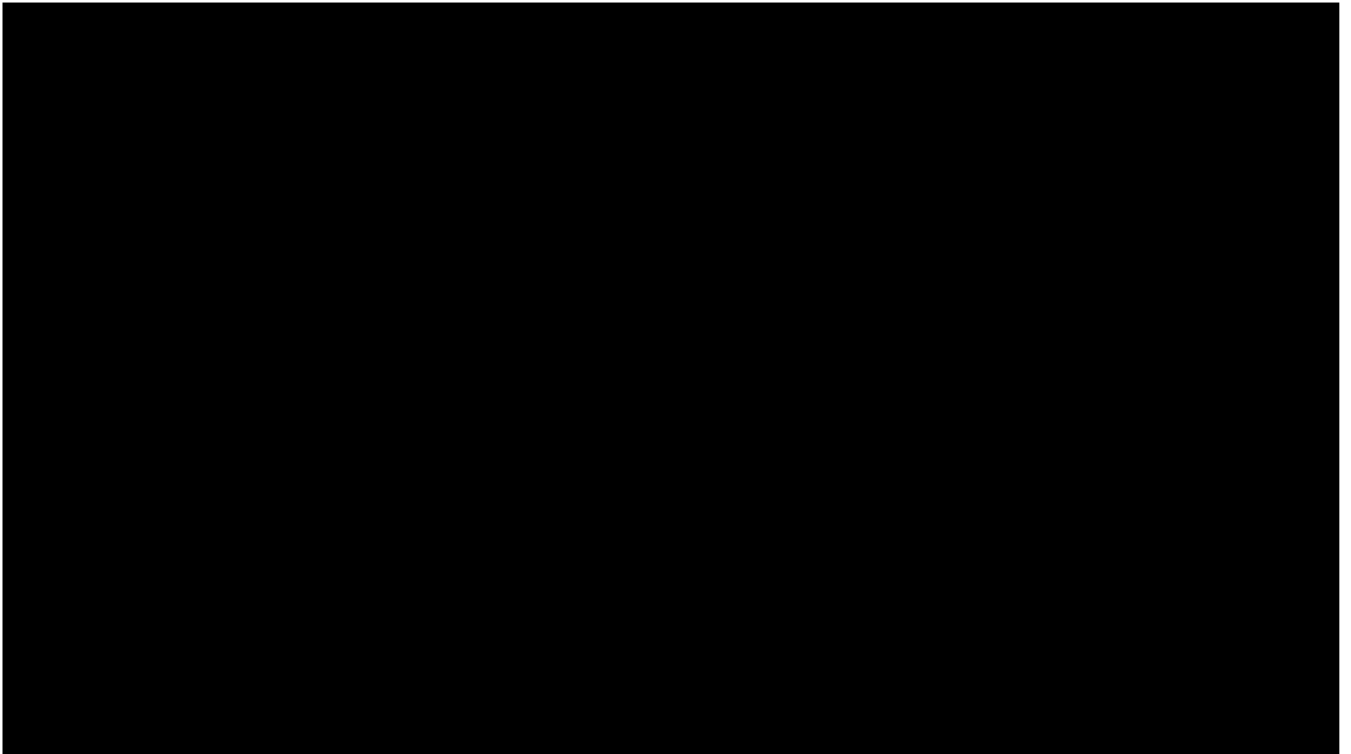
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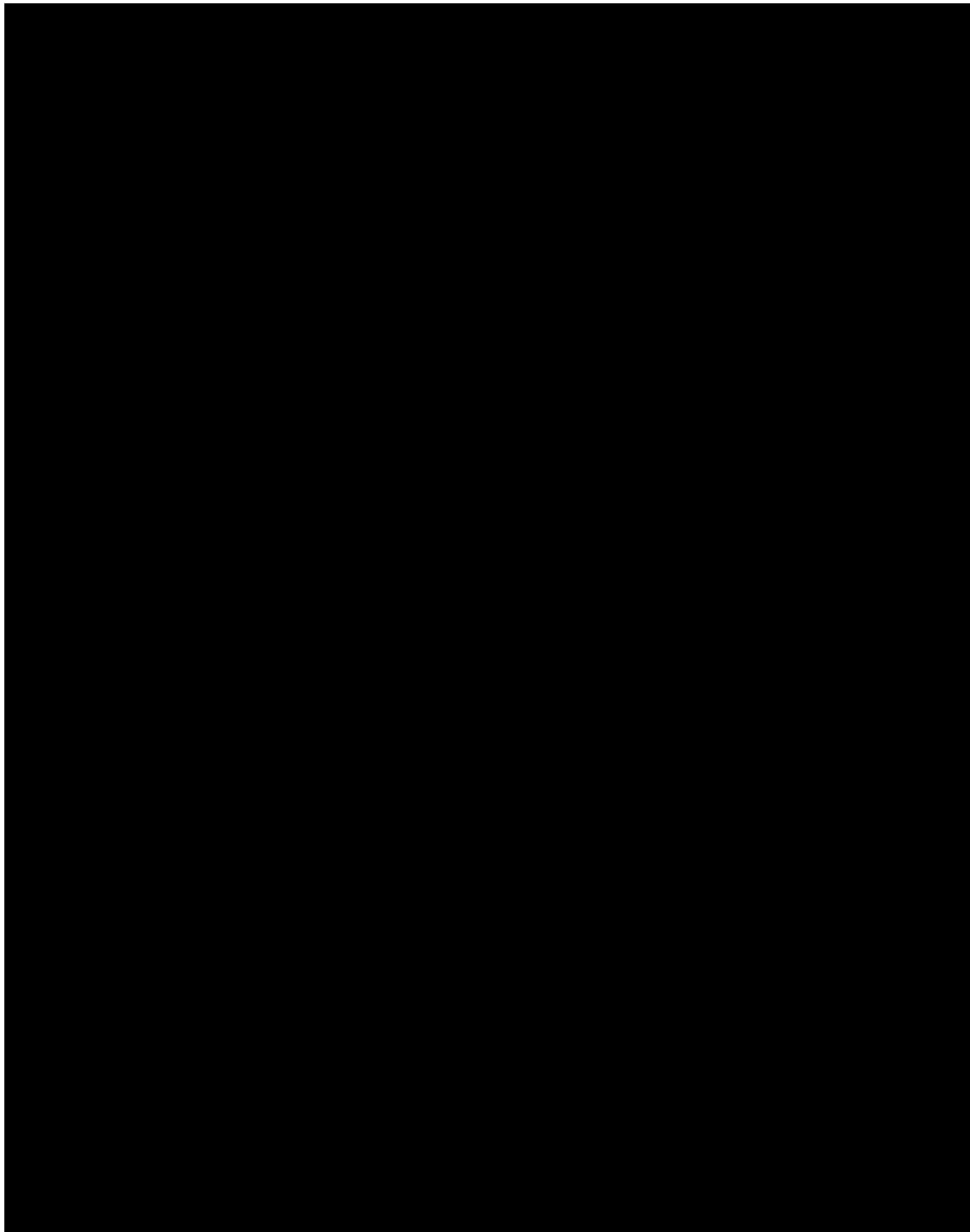
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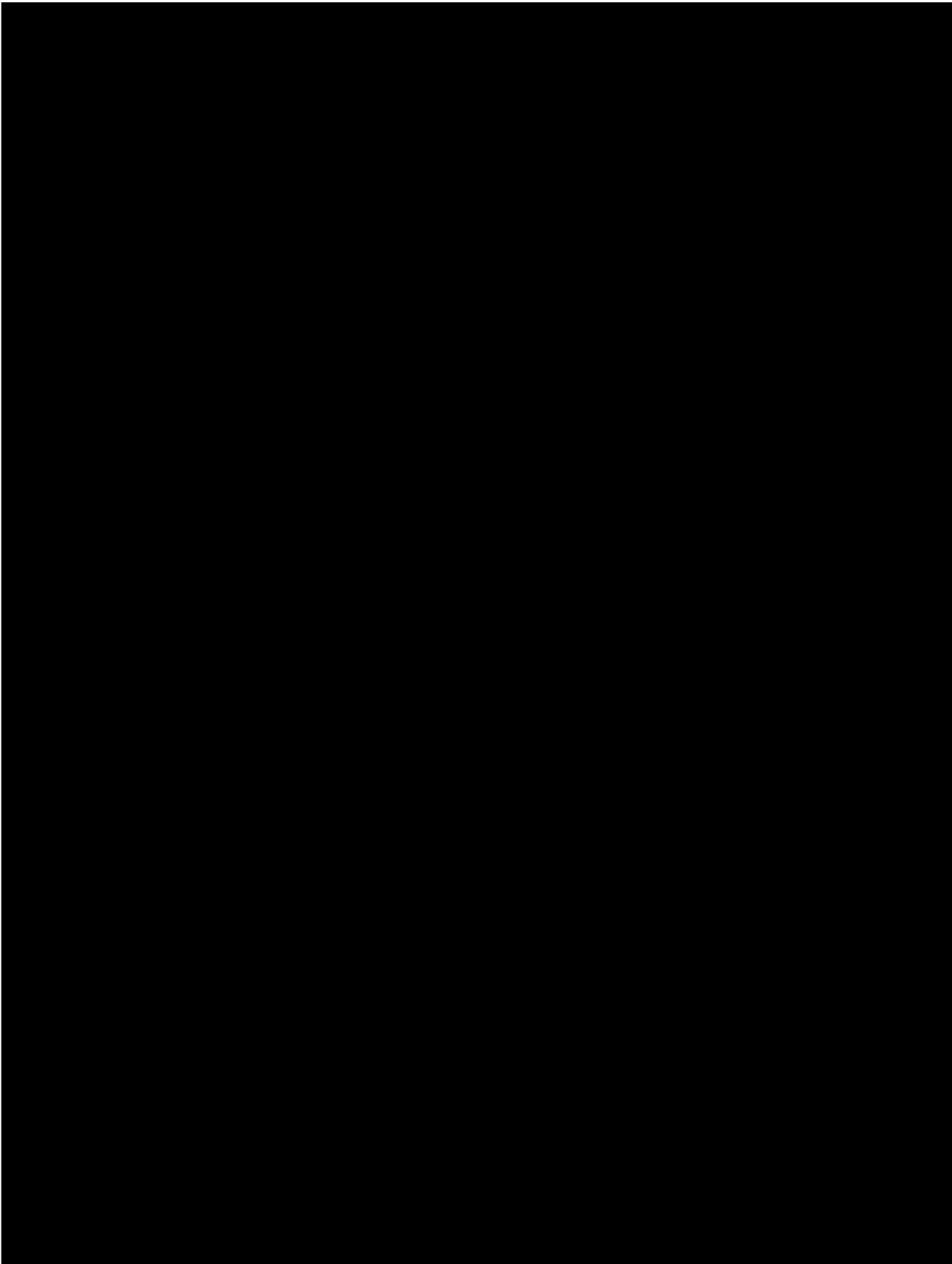
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