

# Rail Delivery Group



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## Guidance Note – Post Incident Social Media Capabilities

### Synopsis

The social media response to major incidents – and other major disruptive events - presents particular challenges due both to the nature and particularly the volume of messages triggered. This document sets out suggested business requirements for meeting these challenges for TOCs to consider including when procuring new or enhanced social media support / analysis tools.

### Applicability

This Guidance Note has been prepared for passenger train operating companies. However, its content may also be of use to others.

Authorised by

A handwritten signature in black ink, appearing to read "JBurt", written over a horizontal dashed line.

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Chair, RDG Emergency Planning Group

## Issue record

Issue	Date	Comments
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## Part 1 About this document

### 1.1 Responsibilities

- 1.1.1 Copies of this Guidance Note should be distributed by RDG members to persons within their respective organisations for whom its content is relevant.

### 1.2 Explanatory note

- 1.2.1 RDG produces RDG Guidance Notes for the information of its members. RDG is not a regulatory body and compliance with RDG Guidance Notes is not mandatory.
- 1.2.2 RDG Guidance Notes are intended to reflect good practice. RDG members are recommended to evaluate the guidance against their own arrangements in a structured and systematic way. Some or all parts of the guidance may not be appropriate to their operations. It is recommended that this process of evaluation and any subsequent decision to adopt (or not to adopt) elements of the guidance should be documented.

### 1.3 Guidance Note status

- 1.3.1 This document is not intended to create legally binding obligations between railway duty holders and should be binding in honour only.

### 1.4 Supply

- 1.4.1 Copies of this Guidance Note may be obtained from the RDG members' website.

## Part 2 Introduction and purpose

### 2.1 Introduction

- 2.1.1 This Guidance Note concerns the social media response to major rail incidents, the scale of which will overwhelm the capabilities of human social media monitoring and response teams to manage.
- 2.1.2 Previous work (see Part 3 below) has served to demonstrate the potential of emerging technology to automatically process messages received. The key need here is to separate out the minority of these that are useful, in that they contribute to the situational awareness of the incident itself and/or require a response, from the vast majority that do not.
- 2.1.3 While the original focus of this work was on the social media response to major incidents, it should be noted that other major disruptive events – widespread power failures, loss of signalling systems, extreme weather, etc. – are also likely to present similar challenges and require similar solutions.
- 2.1.4 The particular requirements specific to post-incident social media response were developed by the (now defunct) Association of Train Operating Companies (ATOC) Social Media Steering Group (SMSG) and set out in detail in the document 'Minimum Industry Standards Specification - New capabilities for using social media to respond to important events' published in November 2016.
- 2.1.5 The SMSG approached the principal existing TOC suppliers of social media analysis tools during 2016 to explore whether their offerings were able – or could be easily made able – to meet these requirements.
- 2.1.6 The vast majority responded positively and were invited to demonstrate their capabilities to the Group in 2017. It was apparent from this that despite their original claims and optimism, while all could provide some of the functionality required, all fell significantly short of providing all of it.
- 2.1.7 A further piece of research conducted on behalf of the RDG Train Operators Operations Council in 2019 indicated that while further technological progress has been made in the interim, it remains the case that there is (as of the date of this Guidance Note) no 'off the shelf' package able to meet the Minimum Industry Standards Specification.
- 2.1.8 While various attempts have been made by RDG to move forward on behalf of the TOC community through development and trialling of a pilot, it has thus far proved impossible to secure the necessary funding, either from internal or external sources.
- 2.1.9 In light of this, the Operations Council has asked that the content of the Minimum Industry Standards Specification be drawn to the attention of TOCs in order that they can, to the extent that they wish to, include its content as part of their own business requirements for any new or enhanced social media capability that they procure.
- 2.1.10 The Minimum Industry Standards Specification is provided (with the content as originally published) as an Appendix to this Guidance Note.

## 2.2 Purpose

- 2.2.1 This Guidance Note is intended to help inform TOCs when setting out their business requirements for new or enhanced social media support/analysis tools with particular reference to the specific circumstances of a major incident or other major disruptive event,
- 2.2.2 The original requirements were drafted with a major incident involving deaths and/or serious injuries. However, any capability developed would be equally applicable to other events that generate excessive volumes of social media messages, such as the major service disruptions associated with events such as power outages, multiple signal failures, extreme weather, etc.

## Part 3 Background

### 3.1 Social media challenges presented by major incidents

- 3.1.1 In 2014 the Association of Train Operating Companies (ATOC) hosted a conference 'Use of Social Media in the Event of a Major Rail Incident - Challenges, Opportunities and Pitfalls'.
- 3.1.2 The key conclusion from this was that the sheer volume of social media messages that would be triggered by a major incident involving significant numbers of casualties would be such as to completely overwhelm human social media monitoring and responding teams.
- 3.1.3 Hence, the requirement was to develop an automated 'triage tool' with an ability to intercept such messages, analyse their content, determine whether a response was needed and prioritise and redirect them accordingly.
- 3.1.4 As a follow-up to the conference, ATOC (through the Operations Council) and The Rail Safety & Standards Board (RSSB) co-funded Demos to undertake a study into the feasibility of developing such an automated triage capability.

### 3.2 Findings of Feasibility Study

- 3.2.1 The study undertaken by Demos included an analysis of all the Tweets sent in response to five major incidents, four rail related (two in the US, one in France and the derailment of the high speed train at Santiago de Compostela in Spain in July 2013 which resulted in the deaths of 79 people) and the fifth the crash of the police helicopter onto the roof of the Clutha pub in Glasgow in November 2013.
- 3.2.2 The Santiago accident was found to have generated 2,266,718 Tweets, sent from 832,532 people.
- 3.2.3 Use of social media has expanded further since 2013, meaning that the expected volume generated by a comparable event would now be substantially greater still.

- 3.2.4 The conclusion of the Feasibility Study<sup>1</sup> was that effective technological solutions can and should be developed, with those tested as part of the associated research found to be able to sort, filter, categorise and prioritise Tweets with an encouraging degree of accuracy..
- 3.2.5 The recommendation was for a full ‘proof of concept’ to demonstrate the ability of the technology to satisfy TOC requirements and the creation of a prototype.
- 3.2.6 To date, it has not (yet) been possible to secure funding of the above.
- 3.2.7 Following publication of the Feasibility Study, the SMSG was set up by ATOC (and subsequently RDG) to take forward the work.

### **3.3 Development of Minimum Industry Standards Specification**

- 3.3.1 A key output from the SMSG was the publication in November 2016 of the document ‘Minimum Industry Standards Specification - New capabilities for using social media to respond to important events’.
- 3.3.2 The content of this remains valid and it is provided, in full and as originally published, as an Appendix to this Guidance Note.
- 3.3.3 It is recommended that TOCs consider using it, in whole or in part, when procuring new or enhanced social media analysis/support systems.

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<sup>1</sup> Copies of the full Feasibility Study are available from RDG on request.

## **APPENDIX – Minimum Industry Standards Specification**

Minimum Industry Standards Specification-  
New capabilities for using social media to respond  
to important events

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## 1. Introduction

The UK Railway Industry has a need for new capability that will:

***Improve the capacity of Train Operators to respond to serious disruptions and incidents on social media, and using information from social media. Three capabilities have been identified as necessary to meet this overall aim: (a) to use social media data to gain situational awareness of an incident and support decisions about how to operationally respond to it; (b) provide customer care, support and information on social media; (c) track and understand the broader conversation about an incident or disruption on social media in the wake of the incident or disruption.***

The purpose of this specification is to enable potential partners to assist train operators and other rail industry organisations to achieve three objectives: First, to gain access to the capabilities set out in this document. Second, in doing so, to improve their response to major incidents that affect the rail industry, both on social media, and using information from social media. Third, and overall, to ultimately improve the experience and safety of their customers during very difficult situations.

Effectively responding to incidents and major disruptions are, of course, important to the rail industry and to train operating companies. An effective response has a number of different elements to it, depending on the nature of the incident itself, but often includes the recovery of the functioning of the network, providing support to any emergency response that the incident necessitates, providing customer care and support to customers during and after the incident, and providing clear information, advice and updates throughout.

Incident and major disruptions now routinely trigger large amounts of reaction on social media. In previous empirical research, it has been found that social media reactions to major incident often include:

- Eyewitness testimonies from those either directly involved, those that saw it happen, or those who arrived at its scene;
- Information directed towards the train operating company on social media. This may include requests for information from family members/friends of those potentially directly involved, requests for information from those who journeys have been or may be disrupted by the event, challenges, criticism and even praise;
- A discussion on social media about what went wrong and who is to blame. This may include rigorously checked facts, but also rumours, unsubstantiated claims and allegations related to either the nature of the event itself or its cause;
- A broader socio-political reaction to the event, including efforts to come to terms with it, the expression of condolence, the organic emergence of social action initiatives (such as giving blood, or volunteering support) and a discussion of how to prevent it happening again.

A number of the above will also apply in the event of major disruptions to the rail network and services operating on it, for example resulting from extreme weather events, power outages, loss of signalling systems, major infrastructure failures and industrial action.

Social media reaction to incidents and serious disruptions can be harnessed by the rail industry to improve how they respond to these incidents as described below. However, the nature of these responses on social media present challenges to this ambition. Collectively, the responses on social media to incidents and serious disruptions:

- are often very large. For example, 2,266,718 Tweets were sent from 832,532 people in reaction to the Santiago de Compostela (Spain) accident of July 2013 which resulted in the deaths of 79 passengers. This figure includes non-Spanish language Tweets and Tweets from news organisations.
- begin to occur very soon after the incident. Across a number of case studies of social media's reaction to incidents, the first reactive social media messages were sent between 3 and 20 minutes after the incident occurred.
- have a varied nature and will include text, images, videos and other kinds of information. The reaction on Twitter to the derailment of an Amtrak train on 12 May 2015 near Philadelphia in the United States, for instance, involved the sharing of over 150,000 images.
- contain information of varying degrees of relevancy, usefulness and urgency for train operating companies (and partners such as the emergency services).

There is currently no industry-wide capability to harness the opportunities that social media offers to respond more effectively to incidents and serious disruptions.

### 1.1. Purpose and scope of this specification

The purpose of this specification is to describe the capabilities necessary to allow the rail industry to harness social media to respond more effectively to incidents and serious disruptions. Suppliers are invited to be proactive and challenge the scope, where they feel that others forms of improvement are possible, or where the capabilities can be applied to other situations and scenarios within the rail industry.

## 2. Current position

### 2.1. System context

Rail organisations currently use a range of systems related to their social media activity. Some, or all of these systems may be able to meet the requirements set out in section 4. However, the industry is looking to expand and improve its capability to respond to incidents and disruptions both using social media, and on social media. Section 4 describes the minimum requirements believed to be necessary to do this.

### 2.2. User characteristics

The profiles of potential users are:

1. day-to-day users, especially social media, communications and customer care teams within train operating companies;
2. decision makers during major incidents e.g.
  - within the rail industry:
    - Stakeholders managing the operational response to the incident (Strategic (Gold) Command Rooms, Director-level decision-makers, etc.)
    - Stakeholders delivering customer care (Rail Incident Care Teams) and customer information (National Operations Centre (NOC))

- Stakeholders responsible for the wider communications response to the incident Press Teams, National Rail Communication Centre (NRCC)
- external to the rail industry: the British Transport Police (BTP), Emergency Services, TfL London Underground Control Centre (LUCC) and Department for Transport (DfT).

### 3. Minimum Industry Standards

Three separate capabilities have been identified to improve the response of train operating companies to incidents and serious disruptions:

1. The ability to use information shared on social media to gain situational awareness about the incident, including its nature, scale and location, the number of people involved, the number and nature of any injuries sustained, and the wider disruptions caused. This is to allow operational decision-makers within the rail industry to respond more effectively, and with more information, to the incident itself. It should be noted that elements of this information may be of immediate and urgent benefit to the emergency service responder, hence there should be a means of making it immediately available to them.
2. The ability to deliver customer care, support and information via social media. This includes the ability to collect and 'triage' requests for information from possible customers on social media, prioritise the requests that are most urgent, and allow these customers to be contacted and helped.
3. The ability to analyse and track the wider discussion on social media related to the incident, identify the themes and topics that characterise this discussion, and highlight important elements within this discussion that may require a communications intervention from the rail industry, including the presence of misinformation and misconceptions, the rise of controversies and new information related to the incident, the scale and nature of blame directed towards organisations involved in the incident, and calls for reform in the wake of the incident.

The requirements for each of these capabilities are described below.

#### 3.1. Overall Requirements

##### 3.1.1. Requirements common to all three capabilities are:

- The ability to provide day-to-day support, and be robust enough to deal with a sudden increase in the volume of messages as might be triggered by a major incident or disruptive event.
- The ability to clearly and honestly display the accuracies, confidence-levels and possible errors that the suggested technology solutions entail, to enable decisions to be responsibly made from their outputs.
- To be useable across a number of different teams within the rail industry, including social media specialists, but also operational responders, customer care professionals and non-specialist director-level decision-makers. Decision-makers and responders to a serious incident are not primarily analysts or researchers, and require clear, intuitive outputs that they can use to quickly make decisions.

- The ability to incorporate as many social media platforms as possible that suppliers consider relevant to the overall capabilities detailed below.
- The ability to operate across all major PC and Mac platforms and on mobile devices, as well as all major browsers.
- The supply of comprehensive user documentation, including technical manuals, design specifications, installation guides, maintenance requirements and disaster recovery solutions and help should be complete. In addition, the help should be context sensitive and explain how to achieve common tasks. Training documentation such as end user training manuals, training guides for training the trainers and end users should be complete. New users should require minimal training.

### 3.1.2. Operations Requirements

Normal and special operations required by the organisation includes:

- The solution shall be available 24/7/365;
- Support shall be available 24/7/365;
- Data processing should not constrain live operations in any shape or form; and
- Disaster recovery needs to be factored in for all components in the supply chain.

### 3.1.3. Security Requirements

The factors that will protect the system from malicious or accidental access, modification, disclosure, destruction, or misuse include:

- Encryption;
- Activity logging, historical data sets; and
- The system shall be hack and end-user proof.

## 3.2. Detailed Requirements

### 3.2.1. Capability 1: A Social Media Situational Awareness Capability

A part of the social media reaction to an incident or serious disruption may help the rail industry develop a better understanding of the incident itself; when it happened, where, how serious it is, who is affected, and whether the situation is changing over time. This information may also be of key relevance to the emergency services' response to the incident. The first important capability is to find, collect and isolate this information very quickly, and present it in a way that allows informs the operational decisions that train operating companies make about how to respond to the incident. To do this, a social media situational awareness capability must include the capacity for:

**Rapid Social Media Data Collection:** The ability to collect social media in the aftermath of an incident that is relevant and in response to the incident, as rapidly as possible after it occurs. Further, the capability to maintain as comprehensive collection strategy as possible as the conversation on social media evolves.

**Rapid Identification of social media data that contribute to situational awareness:** The ability to rapidly identify and establish situational awareness about the incident from the social media data collected. Overall, information shared on social media that relates to the scale, nature, and location of the incident, and the injuries and conditions of those involved are all relevant within this capability. This could include:

- The identification of eyewitness testimony shared on social media about the incident;
- The collection of pictures and videos of the incident shared on social media;
- The identification of users involved in the incident itself, and information that they have shared.

**A real-time situational awareness dashboard:** that clearly and accurately displays the social media data identified (above) that contributes to gaining situational awareness of the incident. The requirement is to present data in a way that is quickly understandable and prioritised, but is also flexible, and allows the human operator to make their own enquiries within it. The dashboard must be user-friendly and allow users to more effectively manage the information they receive during day-to-day operations and in times of crisis. It should also be possible to personalise the dashboard, to meet current and future organisational needs.

The dashboard must:

- Update in real-time to show new information related to situational awareness of the incident as it is shared on social media.
- Display the images and videos shared on social media about the incident
- Display information about the eyewitnesses of the incident identified on social media
- Produce the information detailed above in a way that can be packaged and shared to a number of different stakeholders responsible for operationally responding to the incident, potentially including directly with the emergency services.

**A social media contact list** of identified eyewitnesses who can be contacted on social media by responders to the incident. This should allow the prioritisation of users who are identified to have a high probability of being directly involved in it.

**A confidence and corroboration functionality:** The capability should allow social media data that has been identified as relevant to situational awareness to be, as far as possible, contextualised and corroborated with other sources of information to produce a confidence assessment of the likelihood of any given piece of information to be true.

### 3.2.2. Capability 2: Delivering Customer Care on Social Media

The Rail Industry often receive questions, comments, challenges and feedback addressed to them on a number of social media feeds during normal operation. There is a clear expectation from users that train operators would respond in the aftermath of an incident, and clear increases in anger and frustration when this is not the case. Some messages are urgent and important, enquiring about the wellbeing of family members or friends feared to have been directly involved in the incident itself. Others concern customers who are on other trains, or need to make urgent changes to their transport plans. Some messages will be received from those who cannot receive information, or make contact with the train operator, in any other way.

In the wake of an incident or serious disruption, the volume of these messages may increase beyond the normal capacity of their social media and customer care teams to handle. The second capability is therefore to allow the train operating company to effectively respond to these questions, comments and concerns, especially in situations when their normal operating practices may be overwhelmed. This capability must include:

**Social media data collection:** of all social media posts, in the aftermath of an incident, that are addressed to the train operating company, across the widest possible range of social media channels.

**A ‘Triage’ Capability:** To deal with the possible volumes of information that may be sent to the organisation, the system is required to immediately begin to ‘triage’ social media messages directed at the train operating company at scale, and rapidly. This ‘triage’ must prioritise the social media messages that are most urgently requiring action from the train operating company; whether a reply on social media, a re-contact on another channel, or another action. The triage system must sort:

- Social media messages sent to the Rail Industry that are relevant to the incident or serious disruption from those that are not;
- Of social media messages about the incident, separate those that require or expect a response from those that do not;
- Of social media messages that expect a response, separate those that are relevant to customer care from those that are not;
- Of social media messages that are relevant to customer care, separate those that are urgent (for instance, those that are from people involved in the incident, those that are on services disrupted by the incident, or those who are imminently seeking to travel) from those that are not.

An organisation within the Rail Industry may be contacted on Twitter by friends and family of those potentially directly involved in the incident. The customer care system must be able to identify these, so that the relevant organisation can respond in an appropriate manner, including arranging contact outside of social media, or in person.

**Curated social media data streams to aid response:** The output of the customer care triage system should be a series of curated streams of social media content placed into the categories described above, to be received by the appropriate teams within the Rail Industry. These curated streams should constantly update as new social media content is received, and be ordered on the basis of (a) priority, or (b) kind of response required.

### 3.2.3. Capability 3: Understanding the wider discussion of the incident on social media

Social media is an important forum where people discuss important events and form beliefs and opinions about them. In the wake of incidents and serious disruptions, social media helps form the public understanding of the incident and its cause. Within this broader conversation on social media, blame for the incident is made, initiatives for reform generated, and where organic, citizen-generated social action initiatives in response to the incident arise.

The continuing discussion on social media is likely to be very large, and include a wide variety of different kinds of information. The third capability is therefore to allow train operating companies to understand and track this wider discussion on social media; to know how it develops, to know when to communicate and intervene on social media, to spot rumours and misconceptions or sudden changes in the discussion, to find opportunities to support social action initiatives and people trying to help, and overall to play an informed part of the continuing discussion in the days and weeks after the incident itself. This capability requires:

**Collection of social media data relevant to the discussion as it evolves over time:** Some of the topics and themes of the wider discussion cannot be anticipated. The system must be able to collect as comprehensive a body of social media data as possible that is related to the discussion of the incident, and to accommodate changes to the discussion as it changes over time.

**Conducting agile listening of the discussion on social media:** The system must be able to understand the important themes and topics of the discussion on social media to the incident. Again, it must be agile to how the discussion evolves over time and may include, but not be limited to:

- Tracking the overall volume of social media content sent in reaction to the incident, and identifying spikes or peak moments;
- Identifying the most shared messages related to the incident: the accounts involved with the highest number of followers and the most shared images and links related to it;
- Tracking the spread of the discussion of the incident on social media geographically;
- Tracking the spread of the discussion of the incident across different social media platforms;
- The identification of social action initiatives to help people affected by the incident that form on social media;
- The identification of rumours and misconceptions about the incident;
- The identification of blame directed towards organisations involved in the incident;
- The identification of the rise of controversies, or new information related to the incident;
- The identification of any political reaction to the incident, or other calls for reform;
- The identification of the nature of the media reportage of the incident as shared on social media;
- Overall, the broad understanding of the digital aftermath split into its constituent parts; the expression of grief and condolence, the expression of anger and resentment, calls for reform and the wider media commentary.

**An interactive visual-analytics dashboard:** The results must be presented in a way that is clear to understand, but also capable of reflecting very large, multi-variate and complex social media datasets. To do this, the end-user must have the power to drill into the dataset, and to change the filters and thresholds that are being applied to it. For this, an interactive visual analytics dashboard is necessary. This can present data in a way that is quickly understandable and prioritised, but is also flexible, and allows the human operator to make their own enquiries within it.

## Appendix A. Definitions, Acronyms, and Abbreviations

Emergency services	The various services which together provide the emergency response to major rail incidents/accidents. These are primarily the Ambulance, Fire & Rescue and Police (including British Transport Police) services.
Incident	Refers to occurrences involving passenger injury or fatality that are accidental, as well as those that are intentional (such as acts of terrorism and other malicious occurrences)
RDG	Rail Delivery Group
TOC	Train Operating Company
NRCC	National Rail Communication Centre