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**INC**

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# 需求概述/Requirements Overview

## 背景价值/Background Value

本文档定义了VCS系统的消息通知中心（INC）服务的基本功能，INC基于Android系统的常驻服务定制化开发，会随着VCS系统一起启动，是VCS系统的一种全局效果的系统通知。

This document defines the basic functions of the Information and Notification Center (INC) service of the VCS system. The INC is custom developed based on the resident service of Android system, which will start with the VCS system, and it is a system notification with overall effect for the VCS system.

本文档中所有图片和涉及用户操作的描述均为示意，仅为帮助理解文字之用，不对界面和交互设计作任何指导与规定，交互设计请参考INC对应的交互稿。

All the diagrams and descriptions related to user operations in this document are informativee and are only for the purpose of helping to understand the text, and do not give any guidance and specifications to the interface and interaction design. Please refer to the interaction draft corresponding to INC for interaction design.

## 名词解释/Terms

INC：Information and Notification Center，即消息通知中心。

VCS：Virtual Cockpit System，即智能座舱系统。

# 需求列表/List of Requirements

|  |  |  |
| --- | --- | --- |
| **子功能**  **Sub-functions** | **功能描述**  **Description of Functions** | **优先级**  **Priority**  **（1、2、3依次升高） (1, 2, 3...ascending in sequence)** |
| INC状态  INC State | 展开状态 Expanded | 3 |
| 收起状态 Collapsed | 3 |
| 消息分类 Message Classification | 提示类 Prompt | 3 |
| 安全类 Safety | 3 |
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| 消息排序 Message sorting | 时间顺序 Chronological order | 3 |
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| 消息管理 Message management | 消息来源 Sources | 3 |
| 消息审核(TBD) Message review (TBD) | 3 |
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| 排序更新 Sort update | 3 |
| 提醒标志更新 Alert sign update | 3 |
| 消息打开 Message open | 收起状态下打开 Open in collapsed state | 3 |
| 消息清除 | 展开状态下打开 Open in expanded state | 3 |
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| 消息设置 Message setting | 消息进入INC权限设置 Permission setting for message entering into the INC | 2 |

# 需求描述/Description of Requirements

INC有能力向VCS系统应用或第三方应用提供服务调用的接口，便于这些来自本地应用的消息，在适当状态下采用恰当的方式展示给用户。任何需要通过INC展示的信息，均需要遵循本文所述的需求描述。

INC has the ability to provide interfaces for service calling to VCS system applications or third-party applications so as to facilitate these messages from local applications to be displayed to users in an appropriate manner in an appropriate state. Any information that needs to be displayed through INC must follow the requirements described herein.

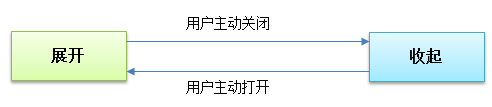
INC作为被动信息接收应用，进入INC的消息由各个应用决定，没有特殊说明的应用的消息，默认不进入INC。

INC is a passive information receiving application. Messages entering INC are determined by each application. Messages from applications without special instructions will not enter INC by default.

## INC状态/INC State

INC具有两种状态：展开状态和收起状态。用户可以通过主动操作，对INC的状态进行切换。INC状态切换如下图所示。

INC has two states: expanded and collapsed. Users can switch the INC state through active operation. INC states are switched as shown below.



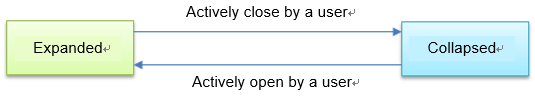


图1：INC的状态切换

Figure 1: INC State Switching

当INC处于展开状态时，历史消息可以查看，可以操作。

When the INC is expanded, historical messages can be viewed and operated.

当INC处于收起状态时，历史信息无法查看或操作。

When the INC is collapsed, historical information cannot be viewed or operated.

### 展开状态/Expanded State

用户可以通过主动操作进入INC展开状态，这些潜在的操作包含但不限于：点击消息提示图标、通过语音进入INC应用等，具体操作以交互设计为准。

Users can enter the expanded state of INC through active operations. These potential operations include but are not limited to: clicking the message prompt icon, entering the INC application through voice, etc. The specific operations shall be subject to interaction design.

在展开状态下，用户可以查看到所有INC已经接收到的**未有效处理**的消息，这些消息按照一定规则聚合和排序，用户可以通过某些操作展开聚合的消息。

In the expanded state, users can view all messages that INC has received but have not been properly handled. These messages are aggregated and sorted according to certain rules. Users can expand aggregated messages through certain operations.

### 收起状态/Collapsed State

用户可以通过某些操作进入INC收起状态，这些操作可以通过物理按键或HMI上的软按键或语音等方式，具体操作以交互设计为准。

The user can enter the INC collapsed state through certain operations, such as using physical buttons or using soft buttons on HMI or voice, and the specific operations shall be subject to interaction design.

在收起状态下，用户无法查看已经收到的信息，如果存在未读消息，则INC需要通过某种提示告知用户；如果不存在未读消息，则不需要该提醒，具体操作以交互设计为准。

In the collapsed state, the user cannot view the received information. If there is any unread message, INC needs to inform the user through some prompts. If there is no unread message, the prompt is not needed, and the specific operation is subject to interaction design.

## 消息分类/Message Classification

### 提示类信息/Prompt Messages

此类INC消息主要与安全无关，主要涉及信息咨询类提醒事件，需要提示用户，主要包含平台端推送的资讯信息（如安吉星推送的ODD导航、平台推送的系统更新），本地端产生的提示类信息（如音乐应用推送的新歌推荐，未接来电等）。

Such INC messages are unrelated to safety but mainly related to information consultation alert events which need to remind users. They mainly include information pushed by the platform (such as ODD navigation pushed by OnStar, system updates pushed by the platform), and prompt information generated by local client (such as recommended new songs pushed by music application, missed calls, etc.).

对于需要进入INC的消息，需要预先定义安全等级，具体要求参见INC消息定义。

For messages that need to enter INC, the safety level needs to be defined in advance. See the Definitions of INC Messages for specific requirements.

### 安全类信息/Safety Information

此类INC信息主要涉及车辆状态，且与车辆行驶安全相关，需要使用明显的方式提醒用户，主要包含各类车载控制器或仪表发出的报警信息（含故障码）。

This type of INC information mainly involves the state of vehicle and is related to the driving safety of vehicle. The user needs to be reminded in an obvious way. It mainly includes alarm messages (including fault codes) issued by various on-board controllers or gauges.

对于需要进入INC的消息，需要预先定义安全等级，具体要求参见INC消息定义。

For messages that need to enter INC, the safety level needs to be defined in advance. See the Definitions of INC Messages for specific requirements.

## 消息提醒/Message Alert

### 新消息提醒机制/New Message Alert Mechanism

在展开或收起状态下，INC都能够接收新消息。

In the expanded or collapsed state, INC can receive new messages.

当INC收到新消息时，无论当前INC处于何种状态均会触发收到新消息的提醒，具体操作以交互设计为准。

When the INC receives a new message, the new message alert will be triggered regardless of the current state of the INC. The specific operations shall be subject to interaction design.

### 新消息提醒声音/New Message Alert Sound

INC需要有能力提供声音提醒功能，具体是否需要声音提醒取决于车机端各个应用，可以参考附录，默认声音关闭，提示声音的开启和关闭可以在设置中改变。

INC needs to be able to provide audible alert function. Whether it needs audible alert depends alert on each application on the main frame. Please refer to the appendix. The default sound is OFF, the notification sound status can be changed in vehicle setting.

当INC收到新信息时，需要立即触发声音提示，需要让用户容易感知到提醒类消息的声音。可以参考消费类电子产品的短信提示音。声音长度不应超过1秒（短信提示音）。

When INC receives a new message, it needs to trigger an audiable alert immediately to allow the user easily perceive the alert message sound. You can refer to the SMS prompt tones for consumer electronic products. The tone length should not exceed 1 second (SMS alert tone).

安全类信息的声音提醒以Chime音为准。

The audible alert of safety information shall be based on the Chime.

### 消息提醒标志

当系统没有未读的INC消息时，则VCS系统不需要提示INC信息。

When the system does not have unread INC messages, the VCS system does not need to prompt INC messages.

当系统存在未读的INC消息时，VCS系统需要有能力向用户发出存在未读INC消息的提醒，并根据INC未读消息的分类，采用下述差异化的标志展示给用户。

When there are unread INC messages in the system, the VCS system needs to be able to send a reminder to the user that there are unread INC messages, and display the following differentiated signs to the user according to the classification of unread INC messages.

1. 如果未读INC消息全部为提示类信息，则可以使用信息提示的图标；

If unread INC messages are all prompt messages, the message prompt icons can be used.

1. 如果未读INC消息全部为安全类信息，则可以使用警示类的图标；

If unread INC messages are all safety information, the alert icons can be used.

1. 如果未读INC消息包含提示类信息和安全类信息，则需要使用警示类的图标；

If unread INC messages contain prompt messages and security messages, the alert icons needs to be used;

图标的具体定义详见对应的设计文档。

For the specific definition of icons, please refer to the corresponding design documents.

## 消息快照/Message snapshot

在展开状态下，用户可以查看INC接收到的所有未读消息，同一个应用发出的多个信息聚合在一起，所有接收到的消息按照一定规则排序（默认时间顺序），需要包含以下信息：

In the expanded state, the user can view all unread messages received by INC. Multiple messages sent by the same application are aggregated. All received messages are sorted according to certain rules (Chronological order by default) and need to include the following information:

消息来源：发送消息的应用的名称。

Source of message: The name of application sending messages.

应用图标：发送消息的应用的icon图标。

Application icon: icon of the application that sends the message.

消息内容：消息实体内容（可以支持文字和图片）。

Message content: message entity content (text and pictures can be supported).

消息发布时间：该时间显示需遵循VCS系统设置的12小时制/24小时制，按照INC接收到消息的时间与当前系统的时间间隔定义，具体要求如下：

Time of issuing messages: the time display shall follow the 12-hour /24-hour system set by the VCS system, and shall be defined according to the time interval between the time when INC receives the message and the time of current system. The specific requirements are as follows:

1. 时间间隔＜1小时：则显示间隔分钟数，舍弃秒钟，例如时间间隔5分30秒，则显示5分钟前；

If the time interval is less than 1 hour, the number of minutes will be displayed, and the seconds will be discarded. For example, if the time interval is 5 minutes and 30 seconds, it will display 5 minutes ago.

1. 1小时≤时间间隔＜4小时：则显示间隔小时数，舍弃分钟、秒钟，例如时间间隔2小时30分30秒，则显示2小时前；

If 1 hour ≤ time interval < 4 hours: the number of hours will be displayed, and the minutes and seconds will be discarded. For example, if the time interval is 2 hours, 30 minutes and 30 seconds, it will only display 2 hours ago;

1. 4小时≤时间间隔＜24小时：若系统设置12小时制，则显示收到信息的具体上午/下午时间，舍弃秒钟，如上午10：01/下午10：01；若系统设置24小时制，则显示收到信息的具体24小时制的时间，舍弃秒钟，如10：01或22：01。

If 4 hours ≤ time interval < 24 hours: if the system is sets to the 12-hour system, the specific morning/afternoon time of the received message will be displayed, and seconds will be discarded, such as 10: 01 a.m./10: 01 p.m.; If the system is set to the 24-hour system, the specific 24-hour time for receiving messages will be displayed with seconds to be discarded, such as 10:01 or 22:01.

1. 24小时≤时间间隔＜48小时或者1天≤系统日期间隔＜2天，则表示此消息为昨天收到的信息，若系统设置12小时制，则显示昨天收到信息的具体上午/下午时间，舍弃秒钟，如昨天上午10：01/昨天下午10：01；若系统设置24小时制，则显示昨天收到信息的具体24小时制的时间，舍弃秒钟，如昨天10：01或昨天22：01。

If 24 hours ≤ time interval < 48 hours or 1 day ≤ system date interval < 2 days, it means that the message was received yesterday. If the system is set to the 12-hour system, the specific morning/afternoon time of the message received yesterday will be displayed, with seconds discarded, such as 10: 01a.m yesterday morning/10: 01 p.m yesterday afternoon. If the system is set to the 24-hour system, the specific 24-hour time of the message received yesterday will be displayed, and seconds will be discarded, such as 10: 01 yesterday or 22: 01 yesterday.

1. 48小时≤时间间隔＜72小时或者2天≤系统日期间隔＜3天，则表示此消息为前天收到的信息，若系统设置12小时制，则显示前天收到信息的具体上午/下午时间，舍弃秒钟，如前天上午10：01/前天下午10：01；若系统设置24小时制，则显示前天收到信息的具体24小时制的时间，舍弃秒钟，如前天10：01或前天22：01。

If 48 hours ≤ time interval < 72 hours or 2 days ≤ system date interval < 3 days, it means that the message was received the day before yesterday. if the system is set to the 12-hour system, the specific morning/afternoon time of the message received the day before yesterday will be displayed, with seconds discarded, such as 10: 01 a.m. the day before yesterday/10: 01 p.m. the day before yesterday; If the system is set to the 24-hour system, the specific 24-hour time of the message received the day before yesterday will be displayed, and seconds will be discarded, such as 10: 01 the day before yesterday or 22: 01 the day before yesterday.

1. 时间间隔≥72小时 或者系统日期间隔≥3天，则表示此消息为很久前收到的信息，若系统设置12小时制，则显示收到信息当天日期和具体上午/下午时间，舍弃秒钟，如2019/7/5上午10：01、 2019/7/5天下午10：01；若系统设置24小时制，则显示收到信息当天日期的具体24小时制的时间，舍弃秒钟，如2019/7/5 10：01或2019/7/5 22：01。

If time interval ≥72 hours or the system date interval ≥3 days, it means that the message was received a long time ago. If the system is set to the 12-hour system, the date and specific morning/afternoon time of the received message will be displayed, and seconds will be discarded, such as 10: 01 a.m. on 2019/7/5 and 10: 01 p.m. on 2019/7/5. If the system is set to the 24-hour system, the specific 24-hour time when the message was received will be displayed, and seconds will be discarded, such as 2019/7/5 10: 01 or 2019/7/5 22: 01.

1. 消息发布时间的显示支持中英文切换，显示跟随当前系统语音设置，并且随着系统时间变化动态更新。

The display of message release time supports switching between Chinese and English. The display follows the current system tone setting and is updated dynamically with the change of system time.

消息聚合数量【可选项】：同一个应用发出的消息会聚合在一起，当同一个应用存在2条及以上未读消息时，需要显示未读消息的数量。如同一个应用只有一条消息，则无需显示消息聚合数量。

Number of Messages Aggregated [Optional]: Messages sent by the same application will be aggregated. When there are 2 or more unread messages sent from the same application, the number of unread messages needs to be displayed. If there is only one message sent from an application, there is no need to display the number of messages aggregated.

操作【可选项】：可以进行的操作，如按钮等。

Operation [optional]: operations that can be performed, such as buttons, etc.



图2：INC的消息快照

Figure 2: INC Message Snapshots

## 消息排序/Message sorting

用户可以在INC消息应用中，选择排序方式对消息进行阅览，INC应用需要有能力提供这样的入口，系统能够支持时间顺序和安全等级顺序。

Users can choose the sorting method to view the messages in the INC message application. The INC application needs to be able to provide such an access, and the system can support chronological order and safety level sequence.

### 时间先后顺序/Chronological order

INC消息支持按照收到信息的时间先后进行排序，可以选择时间由最近到最晚、由最晚到最近。只需要用户点击对应的区域即可进行时间顺序切换，详见交互设计对于该区域的定义。

INC messages supports sorting according to the time they are received. You can choose from the latest time to the earliest time and from the earliest time to the latest time. It only needs the user to click on the corresponding area to switch the chronological order. Please refer to the definition of this area in the interaction design for details.

VCS系统默认按照时间由最近到最晚的顺序从上往下排列。

By default, the VCS system arrange the messages from top to bottom in the order of time from the latest to the earliest.

### 安全等级顺序/Safety level sequence

INC消息支持按照收到信息的安全等级高低进行排序，系统默认按照安全等级由高到低排序，系统需要将不同安全等级的消息显著的区分展示出来，详见交互设计文档的定义。

INC messages support sorting according to the safety level of received information. By default, the system sorts the messages according to the safety level from high to low. You can choose the priority from high to low, or from low to high, it only needs the user to click on the corresponding area to switch the safety level sequence. The system needs to clearly distinguish and display messages with different safety levels. See the definitions given in the interaction design document for details.

通常情况下，安全类信息安全等级高，提示类信息安全等级低。

Normally, the safety level of safety messages is high and that of prompt messages is low.

当INC消息安全等级一致时，原则上需要参考时间的先后顺序进行二次排序。

When the safety level of INC messages is consistent, it is necessary to carry out secondary sorting with reference to the sequence of time in principle.

所有进入INC的消息，详见附录，均需要按照下面的原则进行安全等级定义，示例如下：

All messages entering INC (refer to the appendix for details) are required to have the safety level defined according to the following principles. Examples are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| 序号  S/N | 应用名称  Name of Application | 消息类型  Type of Message | 安全等级Security level  （1-2，1等级高，2等级低）  (1-2, 1 is the higher level, 2 is the lower level) |
| 1 | OnStar | 流量提醒  Data traffic alert | 2 |
| 2 | DTC故障码  DTC code | 胎压报警  Tire pressure alarm | 1 |

## 消息管理/Message management

### 消息来源/Sources

INC可以接收来自本地应用（如流量预警等级）的消息，这些消息体现在系统级APP的通知（如系统OTA更新通知，系统壁纸切换等）和第三方APP的通知（如Reminder推送的节日提醒，天气预报推送的台风警报等）。

INC can receive messages from local applications (e.g. data traffic alert level), which are embodied in notifications from system-level APPs (e.g. system OTA update notifications, system wallpaper switching, etc.) and notifications from third-party APPs (e.g. holiday reminder pushed by Reminder, typhoon alerts pushed by the weather forecast, etc.).

### 消息原则（TBD）/Message principles (TBD)

系统级APP或第三方APP根据需要可以向INC中推送消息。如需要通过INC展示消息时，则该消息需要包含但不限于以下原则：

System-level APPs or third-party APPs can push messages to INC as needed. If a message needs to be displayed through INC, the message needs to include but not be limited to the following principles:

强制用户操作或者阅读的消息，不使用INC展示。这类消息将由各个应用的popup负责显示和处理，不属于INC的范畴。例如连接的蓝牙突然断开了，此时会弹出popup，而不是在INC中显示一条消息。

Messages that enforce users to operate or read will not be displayed by INC. This kind of messages will be displayed and processed by popup of each application, which does not belong to INC. For example, if the connected bluetooth is suddenly disconnected, a popup box will come up instead of displaying a message in INC.

时效性强，不允许用户错过，或者错过后将有严重后果的消息，不使用INC展示。如行程过程中接近前方障碍物时的提醒，直接在HUD上显示，而不是在INC中显示一条消息。

Messages that have strong time effectiveness and do not allow the users to miss, or that will have serious consequences after missing will not be displayed by INC. For example, the reminder when approaching an obstacle ahead during the trip will be displayed directly on the HUD instead of displaying a message in INC.

### 消息聚合/Message aggregation

聚合是指同一个应用发出的具有相同消息分类的多个消息的组合。

Aggregation refers to the combination of multiple messages of the same message type sent by the same application.

在INC展开状态下，聚合的消息是按照一定显示规则排序，所有进入INC中的消息按照消息分类和消息来源分类。

In the expanded state of INC, aggregated messages are sorted according to certain display rules, and all messages entering INC are classified according to the type and source of messages.

默认情况下，一个应用只有一个消息分类，当该应用在INC中存在超过2条及以上消息时，则INC中消息需要聚合。例如：安吉星流量提醒消息聚合。

By default, an application has only one message type. When the application has more than 2 or more messages in INC, the messages in INC need to be aggregated. For example, OnStar data traffic alert messages will be aggregated.

当INC中一个应用的存在2个消息分类时，则该应用需要支持2个聚类信息。如该消息分类对应的INC消息超过2条及以上时，则该分类消息需要在INC中聚合。例如：车辆状态安全类信息聚合，车辆状态提示类信息聚合。

When an application in the INC has 2 message classifications, the application supports at most 2 aggregated messages. If there are more than 2 INC messages for which the message classification is applicable, the classified messages need to be aggregated in INC. For example, vehicle status safety messages aggregation and vehicle status prompt messages aggregation.

在INC展开状态下，用户可以查看到各类聚合状态下的消息，用户可以选择展开其中的一个聚合消息，该聚合的消息会按照当前排序规则展开。

In the INC expanded state, users can view messages in different aggregated states. Users can choose to expand one of the aggregated messages. The aggregated messages will be expanded according to the current sorting rules.

聚合消息的展开和折叠状态具有记忆功能，在INC收起状态下，聚合的消息不可见，但是聚合的消息展开或折叠状态维持与INC展开状态一致，即如果在INC展开状态下，聚合消息被展开过，INC收起时，该聚合消息的展开状态保持不变，当INC再次展开时，该聚合消息保持展开状态。

The expanded and collapsed states of the aggregated message has the memory function. In the collapsed state, the aggregated messages are not visible, but the expanded or collapsed state of the aggregated messages remains consistent with the expanded state of the INC, that is, if the aggregated message is expanded in the INC expanded state, the expanded state of the aggregated message remains unchanged when the INC is collapsed, and the aggregated message remains expanded when the INC is expanded again.

### 排序更新/Sort update

同一个应用程序发出了多个的消息，则需要在INC中该应用推送的信息的基础上进行消息更新，即在聚合消息基础上更新。

If the same application program sends out multiple messages, it needs to update the messages based on the messages pushed by the application in INC, that is, update on the basis of aggregated messages.

例如，在使用4G流量时，VCS系统通过INC推送流量不足提醒，之后推送流量即将用尽提醒，由于都是流量提醒消息，则将2条信息在同一个数据流量通知中更新。

For example, when using 4G data traffic, the VCS system pushes a reminder of insufficient data traffic through INC, and then pushes the reminder that data traffic is about to run out. Since both messages are data traffic reminder messages, two messages are updated in the same data traffic notification.

不同应用程序发出了新消息时，则需要在INC当前排序原则上进行更新，主要分为按照时间顺序更新、按照安全等级更新。

When different applications send out new messages, they need to be updated according to INC's current sorting principle, which is mainly divided into updates by chronological order and updates by safety level.

按照INC设置的时间顺序更新，即所有INC中的聚合消息之间、各个聚合消息的内部消息之间均按照设定的时间顺序进行排序并显示。其中，聚合消息时间就是本聚合消息最近收到的信息的时间。

Update in chronological order, that is, among all aggregated messages in INC, the messages within each aggregation are sorted and displayed in chronological order. Among them, the aggregated message time is the time when the last message was received.

例如，在安全等级相同的情况下，默认设置按照时间由最近到最晚的顺序从上往下排列。当前INC中存在三个聚合消息且按照时间顺序显示为：A（A1、A2）、B（B1、B2）、C（C1、C2、C3），如果此时收到新消息B3，则消息更新显示顺序变化如下图所示：

For example, in the same safety level, the default sorting is arranged from top to bottom in the order of time from the nearest to the last. There are currently three aggregated messages in INC and they are displayed in chronological order: A (A1, A2), B (B1, B2), C (C1, C2, and C3). If a new message B3 is received at this time, the message update display sequence changes as shown in the following figure:

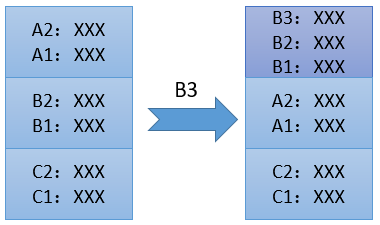


图3：INC按时间排序消息更新

Figure 3: INC Message Updating in Chronological Order

按照安全等级更新，即所有INC中的聚合消息之间按照安全等级的高低排序，相同安全等级的聚类信息之间及各个聚合消息的内部信息之间按照时间先后顺序进行排序并显示，系统默认按照安全等级由高到低顺序自上而下排序。

Update according to safety level, i.e. all aggregated messages in INC are sorted according to the safety level, and the messages within each aggregation is sorted and displayed in chronological order. By default, the system sorts according to the safety level from high to low.

例如， INC中当前存在两类安全等级消息且按照安全等级顺序显示为：A（A1、A2）、B（B1、B2）、C（C1、C2、C3），其中A等级高，B、C安全等级低。如果此时收到新消息B3，则消息更新显示顺序变化如下图所示：

For example, there are currently two types of safety level messages in INC and they are displayed in the order of safety level: A(A1, A2), B(B1, B2), C(C1, C2, C3), where Level A is high and Levels B and C are low. If a new message B3 is received at this time, the message update display sequence changes as shown in the following figure:

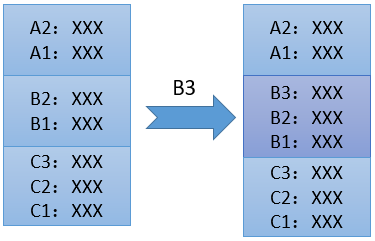


图4：INC按安全等级排序消息更新

Figure 4: INC Message Updating by Safety Level

### 提醒标志更新

当INC中存在未读的消息时，VCS系统会有提醒标志，在一个车辆启动周期内该标志会被保持。

When there are unread messages in INC, the VCS system will have an alert sign, which will be maintained during a vehicle start-up cycle.

仅当INC中所有消息被用户有效阅读后，VCS系统在不会出现提醒标志。用户有效阅读是指在INC展开状态下，用户通过某种操作（例如软按键或VR）进入到INC消息实体（可以是INC展开消息具体内容，也可以是通过INC提醒跳转到第三方应用），此时该消息被视为有效阅读，对应的INC中未读消息数量减一，如果未读消息为零时，则认为INC中所有的消息被用户有效阅读。

No alert sign will be displayed only when all messages in INC are effectively read by the user. Effective reading by user means that the user enters the INC message entity (which can be the specific content of the expanded message in INC or jump to a third-party application through the INC reminder) through some operations (such as soft buttons or VR) in the INC expanded state. The message is considered to be effectively read, and the number of unread messages in the corresponding INC is reduced by one. If the number of unread messages is zero, all messages in the INC are considered to be effectively read by the user.

## 消息打开/ Message open

在INC收起状态下，可以通过消息状态标识进入INC展开状态，但无法直接打开INC消息。

In the INC collapsed state, users can enter the INC expanded state through the message status identifier, but you cannot directly open the INC message.

在INC展开状态下，新消息不管是提示类信息还是安全类信息，均需要在INC应用中使用恰当的消息聚合方式展现，显示的顺序按照INC消息排列规则执行。

In the INC expanded state, new messages, whether prompt messages or safety messages, need to be displayed in the INC application using an appropriate message aggregation method, and the display order shall be subject to the INC message arrangement rules.

所有在INC展开状态下显示的消息，可以直接打开，根据发送应用的不同，支持如下用户操作：

All messages displayed in the INC expanded state can be opened directly. Depending on the sending application, the following user operations are supported:

1. 支持通过点击INC中视觉展示的图标实现该操作，如播报声音等，该功能是可选项。

That operation is supported by clicking on the icon displayed visually in INC, such as broadcasting sound, etc. This function is optional.

例如某地出现地质灾害，SGM平台推送一段告警的录音文件，在INC中用户可以点击语音图标，实现语音自动播放。

For example, when a geological disaster occurs at a certain place, the SGM platform will push a sound recording file of alarm. In INC, the user can click on the sound icon to automatically play the voice.

1. 支持INC消息与**各个应用**之间的跳转，当用户进入INC消息应用时，可以通过INC消息中的关键信息触发应用间跳转，该功能是必须项。支持跳转的逻辑参考各个应用需求文档。

Jump between INC message and **each application** is supported. When a user enters an INC message application, jump between applications can be triggered by key information in the INC message. This function is a must. Refers to the application requirements documents for the logic supporting the jump.

例如系统触发胎压安全警报INC消息，用户通过点击警示图标，展开INC消息，并选择胎压报警，此时INC应用展示胎压报警的具体信息，并将故障描述作为关键信息，用户点击该关键信息，可以跳转到电子手册查看该报警的解决方案。

For example, when the system triggers the tire pressure safety alarm INC message, the user clicks on the warning icon to expand the INC message and selects the tire pressure alarm. At this time, the INC application displays the specific information of the tire pressure alarm and takes the failure description as the key information. The user clicks on the key information to jump to the electronic manual to view the solution for that alarm.

1. 进入INC消息的未读/已读状态更新需要和各个应用保持一致，即如果INC收到一条未读消息，当用户在应用中打开该未读消息，则INC中的该消息的状态需要有能力被设置成已读状态。

INC Message read and unread status update need to be consistent with each application, for example VCS receive an unread INC message, when user open this message in application, then the message status will be set to read in INC.

## 消息清除

所有在打开的INC中出现的消息都应该能够被清除，主要有以下3种方式：

All messages appearing in an open INC should be able to be cleared mainly in the following three ways:

1、单条消息清除

1. Clear a single message

用户可以在INC中选择一条消息，并手动删除该条消息。

Users can select a message in INC and delete it manually.

对于聚类信息，可以先展开，再选择需要删除的单条信息。  
For aggregated message, you can expand it first and then select a single message to delete.

2、聚类消息清除

2. Clearing an aggregated message

用户可以在INC中选择一个聚类信息，并手动删除这个聚类消息，此时聚类中包含的所有消息均会被删除。

Users can select an aggregated message in INC and delete it manually. At this time, all messages contained in the aggregated message will be deleted.

3、一键全部清除

3. Clear all by one click

用户可以在INC中选择一键清除功能，这样INC中收到的所有消息均会被删除。

The user can select the one-button clear function in INC, so all messages received in INC will be deleted.

4、系统自动清除

4. Automatic clearing by the system

在一个启动周期内所有INC接收到的信息仅在本次启动周内显示，当VCS系统关闭或重新启动时，这些INC消息将会被清除。VCS系统无需保存当前启动周内INC收到的信息。

All messages received by INC in one startup cycle will only be displayed in that startup cycle. These INC messages will be cleared when the VCS system is shut down or restarted. The VCS system does not need to save the message received by INC during the current startup cycle.

## 消息设置/Message setting

VCS系统提供一个消息设置功能，支持用户对进入INC的消息进行管理。

The VCS system provides a message setting function to support users to manage messages entering the INC.

默认情况下，INC会响应所有应用的通知消息。

By default, INC will respond to notification messages from all applications.

用户可以对进入INC的应用进行设置，只有被选中的应用发出的信息才会被INC响应，即这些被选中应用的消息，会通过INC消息提醒用户。

Users can set the applications which can access the INC. Only messages sent by the selected applications will be responded by INC. that is, the messages of these selected applications will remind users through INC messages.

## 性能要求/Performance requirements

VCS系统本地应用向INC推送消息耗时不得超过0.1秒。

The time taken by the VCS system local application to push messages to INC shall not exceed 0.1 seconds.

在一个点火周期内，VCS系统有能力支持99条消息的显示能力，如果超出的话，需要有能力删除最早收到的消息。

In one ignition cycle, the VCS system has the ability to support the display of 99 messages. If it is exceeded, it needs to have the ability to delete the earliest received message.

VCS系统中英文切换时，INC需要支持双语切换。

When switching between Chinese and English in VCS system, INC needs to support bilingual switching.

# 系统需求/System Requirements

## 账号相关/Account Related

NA。

## 版本升级/Version Upgrading

随系统升级。

To be upgraded with the system.

## 相关CAN信号/Related CAN Signals

车速超过5km/h时，所有进入INC的消息均不会触发声音提醒。

When the vehicle speed exceeds 5km/h, all POPUPs will no longer appear.

## 相关标定项/Related Calibration Items

NA。

# 附录/Appendix

（其他需求相关内容，可选）

(Other requirement-related content, optional)



**Revision Log**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Version** | **Date** | **Section** | **Description** | **Author** |
| 0.0.0.1 | 2018-07-19 | ALL | Initial release | Shi Cunjie |
| 0.0.0.2 | 2018-08-23 | 3.1、3.2 | INC状态和消息提醒策略更新  INC Status and Message Alert Policy Update | Shi Cunjie |
| 0.0.0.3 | 2018-08-27 | 3.1、3.6、3.8 | INC状态更新、呈现方式、消息更新  INC Status Update, Display Method, Message Update | Shi Cunjie |
| 0.0.0.4 | 2018-11-14 | 3.2、3.3、3.4、3.5、3.6、3.7、3.8 | 新增消息分类、消息提醒、呈现方式、消息排序、清理机制；  New message classification, message reminding, display method, message sorting and clearing mechanism;  更新显示时机、消息操作  Update display timing and message operations | Shi Cunjie |
| 0.0.0.5 | 2019-06-12 | 1、2、3 | 需求优化，文档结构调整，部分内容增删  Requirements optimization, document structure adjustment, addition and deletion of some contents | Shi Cunjie |
| 0.0.0.6 | 2019-07-04 | 3 | 文档结构调整，新增消息设置，更新了清理机制，消息集合等  Document structure adjustment, new message settings, updated clearing mechanism, message aggregation, etc. | Shi Cunjie |
| 0.0.0.7 | 2019-07-16 | ALL | 初版需求发布及评审 Initial release and review of requirements | Shi Cunjie |
| 0.0.0.8 | 2019-09-05 | ALL | 更新3.6.4图示，删除3.6.5，删除3.7.1，更新4.3消息提醒限制  Update 3.6.4 picture, delete 3.6.5 and 3.7.1,update 4.3 message reminder limit | Shi Cunjie |
| 0.0.0.9 | 2019-09-06 | 3.3.2、3.6.4  3.7 | 新增消息声音设置，聚类信息支持按时间规则排序，消息已读和未读状态在INC和应用中保持一致  Add message sound setting, collected message support sorting by time rule, message read and unread status consistent across INC and applications | Shi Cunjie |
| 0.0.0.10 | 2019-12-27 | ALL | Dual language version release. | Shi Cunjie |
| 0.0.0.11 | 2021-3-3 | 5 | 更新进通知中心应用的附件 | Huang xingxing |