

sNote is an app that allows users hide their private messages into an image by a mix of standard cryptography and steganography techniques.



sNote exploits iOS AES 32 b cipher and a FS based steganography library.

# s-Note

## At Glance

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# 1. Preface

s-Note is an App for iPhone/iPad that allows the user hiding a note, with attachment files, into an image picked from the photo library. The files might be a list of contacts, calendar events or documents stored into a cloud location (e.g. iCloud, Dropbox).

s-Note is distributed to all end users in all countries defined by the US Bureau of Industry and Security (BIS), the France Agence Nationale de la sécurité des systèmes (ANSSI) and associated classification reports.

The hiding mechanism leverages on a mix of steganography and cryptography techniques. The encryption process requires the user to select an image from his/her photo library, digit a password, type the note, eventually attach files, and save it. Images that contain notes must not be modified, resized or filtered in order to preserve the integrity of the note itself. In the time of the Internet, s-Note allows anyone to hide, a place that anyone looks at and no one can watch into: an image, its private data. s-Note exploits the standard AES cryptography algorithm to encrypt user info and a modified version of the F5 steganography algorithm to inject them into an image. The note size is limited by image capacity. As well known in the literature, the F5 algorithm limits are the message size, while it decreases

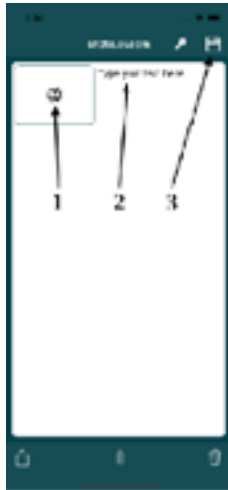
the detection possibility: so it is even hard to understand if an image contains a message.

This short manual is proved to allow the user familiarising with s-Note and the steganography concepts implemented by this App. While it presents the most important functionalities, it does not show any possible user interface interaction.

Visit our site

<https://snote.eu.com>

## 2. Write a text note



Open s-Note

1. **Select** an Photo, let say "A"
2. **Write** your Text  
current password is **default**
3. **Save**
4. **Modify** the Photo

**Info.** Your note is **encrypted** (with AES 256) with your password and **injected** (with our modified version of F5) into the image you have just modified. The photo that masks your note is added to your **Favorites** album.

## 3. Change the password



Open s-Note

1. **Select** an Photo, let say "B"
2. **Write** your Text
3. **Select** the **Key** icon
4. **Digit** your password and click **Ok**
5. **Save** and **Modify** the Photo

**Warning:** s-Note does not allow you digit a blank password, in case the last is used. The password is not saved by s-Note. If you forget the password s-Note cannot restore it.

## 4. Read a note

If you have not change the default password.

**Open** s-Note

1. **Select** Photo "A"

If you have changed the default password.

**Open** s-Note

1. **Select** the **Key** icon
2. **Digit** your password and click **Ok**
3. **Select** a Photo "B"

## 5. Delete a note



**Open** s-Note

1. **Select** Photo "A" or Photo "B" (*the latter by entering the proper password*)
2. **Select** the **Trash** icon
3. **Select Revert**

**Info.** s-Note will reopen the original Photo into the Apple Photo Library.

## 6. Send a note

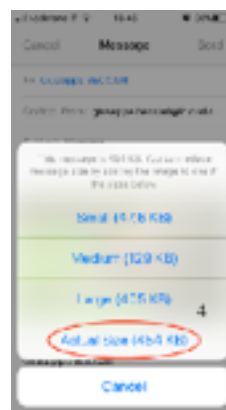
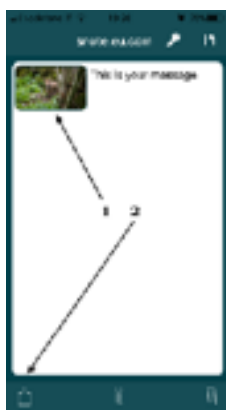
A note is hidden into a Photo. To send a note to a recipient, you has to send the Photo that hide the note to her/him without changing the Photo format. The recipient has to save the photo into his/her photo library and open it with s-Note.

**Warning.** If you resize the photo, or change its colours, you will loose the hidden note.

**Info.** Currently the unique App that does not resize the Photo is Mail is you select to send the Photo in its **actual size**.

### Open s-Note

1. **Select** Photo "A" or Photo "B" (*the latter by entering the proper password*)
2. **Select** the **Share** icon
3. **Select** the **Mail** icon
4. **Send** the Photo actual size format



## 7. Attach additional info to your note

Users might attach to the note one or more contacts, a calendar events or documents.

**Warning.** s-Note implements a modified version of F5 steganography algorithm to inject data into a JPEG image. F5 is well known to be hardly detectable, i.e. it is difficult for a third party to understand if a photo contains any hidden data. On the other hand, F5 limits size of data that can be masked into a photo. The image size (width x height) is somehow correlated to the F5 capacity but, due to the JPEG data structure, we cannot reassign the user a larger image will allow masking a larger note. JPEG is compressed image format. Usually, often a text document which is some hundred KB in size can be hidden, hundreds KB are also sometime possible, most of the time 1 MB cannot be hidden.

s-Note is design to mask private text note with some attachments, not for documents encryption.



## 7.1. Contacts & Calendar Events

### Open s-Note

1. **Select** Photo "A" or Photo "B" (the latter by entering the proper password)
2. **Tap** on **Clip** (the attachment list appears, and it is empty the first time)
3. **Tap** on **+**
4. **Select** the **Contacts** menù to attach one or more contacts to the note
5. **Select** on or more Contacts from the list that appears (all contacts in your device are listed here, a search function is provided)
6. **Tap** on **Done** (the attachment list appears)
7. **Save** and **Modify** the Photo

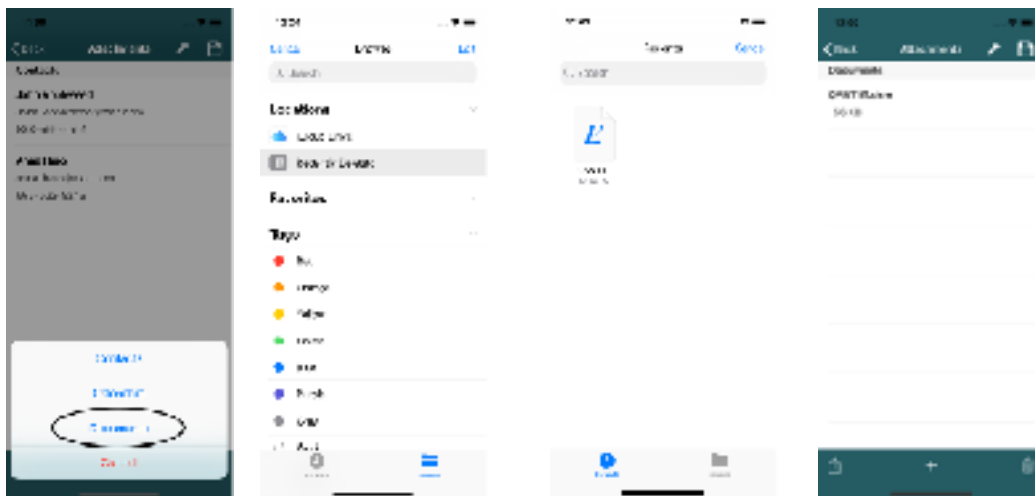


**Repeat** the same steps but select the **Calendars** menù instead to attach a Calendar event.

## 7.2. Documents

### Open s-Note

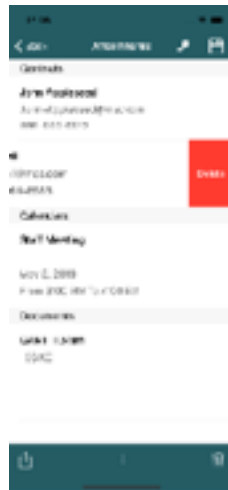
1. **Select** Photo "A" or Photo "B" (*the latter by entering the proper password*)
2. **Tap** on **Clip** (*the attachment list appears*)
3. **Tap** on **+**
4. **Select** the **Documents** menù to attach a document to the note
5. **Browse** your document Locations, Drivers (iCloud, Dropbox, Google Driver), Folder and Files
6. **Select** a document
7. **Save** and **Modify** the Photo



## 6.3. Others

Any attach can be deleted with a finger swipe.

**Warning.** **Save** and **Modify** the Photo after attach removal.



## 7. Support Contacts

Contact us for any additional information, suggestion, or bug at [helpdesk@snote.eu.com](mailto:helpdesk@snote.eu.com).