

# *SIM Card Market Monitoring Process*

Ref.: SAP001 V19.02

## 1. Introduction and Warnings

This process has been voted by the Trusted Connectivity Alliance Board of Directors during the Board Meeting dated 05<sup>th</sup> October 2000; modifications have been made and approved during the Board Meeting dated 22<sup>nd</sup> May 2001 (SAP001 V2).

Other modifications have been made during a Board Meeting dated 22<sup>nd</sup> March 2002 (SAP001 V3), a Board Meeting dated 10<sup>th</sup> December 2002 (SAP001 V4), a Board meeting dated 18<sup>th</sup> November 2003 (SAP001 V5), a Board Meeting dated 15<sup>th</sup> July 2004 (SAP001 V6), a Board Meeting dated 04<sup>th</sup> November 2004 (SAP001 V7), a Board Meeting dated 1st December 2006 (SAP001 V8), a Board Meeting dated 12<sup>th</sup> November 2006 (SAP001 V9), a Board Meeting dated 30<sup>th</sup> June 2009 (SAP001 V10), a Board Meeting dated 25<sup>th</sup> arch 2010 (SAP001 V11), a Board Meeting dated 30<sup>th</sup> March 2011 (SAP001 V12), a Board Meeting dated 2<sup>nd</sup> April 2012 (SAP001 V13), a Board Meeting dated 7<sup>th</sup> October 2013 (SAP001 V14), Electronic Board decision dated 21<sup>st</sup> March 2016 (SAP001 V15), a General Assembly Meeting dated 28<sup>th</sup> June 2017 (SAP001 V16), a Board Meeting dated 3<sup>rd</sup> March 2018 (SAP001 V17), a Board Meeting dated 18<sup>th</sup> September 2018 (SAP001 V18), Electronic Board decision dated 8<sup>th</sup> April 2019 (SAP001 V19.01), Electronic Board Decision dated 4<sup>th</sup> November 2019 (SAP001v19.02).

The goal of this process is to provide a means for Trusted Connectivity Alliance members to monitor with an acceptable level of accuracy the whole SIM Card market according and its main segments, the whole Embedded Secure Element market as well as remote eUICC / eSE management services on a quarterly basis.

This process is designed to ensure the confidentiality of the information provided by each Trusted Connectivity Alliance member to feed the process.

**Important:** The information and market data gathered by this process pertains to the Trusted Connectivity Alliance and are considered as confidential information. **This information should not be published by any party external to the Trusted Connectivity Alliance or any Trusted Connectivity Alliance Member without agreement of the Trusted Connectivity Alliance Board.**

Official publication of those data in the name of the Trusted Connectivity Alliance must be voted by the Board.

**Process owner:** This process is maintained and managed by Joseph Perea, Operations Secretariat of Trusted Connectivity Alliance. Any information request or comment is to be sent to [secretariat@TrustedConnectivityAlliance.org](mailto:secretariat@TrustedConnectivityAlliance.org) (Tel.: +1 512 – 698 – 7553).

## 2. Process Description

### 2.1 General overview of the process

All Trusted Connectivity Alliance Members send information related to their sales on a pre-defined period to a neutral party ensuring the confidentiality of those figures and aggregating each members' inputs to produce global market figures.

SIM Market Monitoring Process participants (e.g. Marketing Directors & Marketing Analysts) shall NOT include any Board Member, including the Chairman, in the various email exchanges during the execution of the process.

This neutral party, agreed by all Members, sends back the aggregated market figures to the Members “for their eyes only”, including the number of respondent companies.

It is important to note that those figures are seen by the Trusted Connectivity Alliance Members as being highly confidential and that guaranteeing their confidentiality is a crucial point. It is then important that the neutral party should be trusted by all the Trusted Connectivity Alliance Members.

A specific procedure will ensure the confidentiality of the Members’ inputs (see below).

The market figures to be monitored will consist in sales (in volume of SIM Card billed) by area and product segment, the Embedded Secure Element (eSE) global figure as well as eSIM Data on a given period of time. The typology is further defined in this document. This process will be renewed on a quarterly basis.

The neutral party is Squaris Consultants Inc. (Squaris), official trusted partner of the Trusted Connectivity Alliance.

## 2.2 Participation to the process

Every member of the Trusted Connectivity Alliance shall participate (i.e., actively participate) in this process, otherwise, non-participating members will trigger a “bad guy” procedure which will require Squaris#1 to contact the non-participating member by phone to ensure they submit their figures. New members will participate when joining the Trusted Connectivity Alliance as mentioned in the Application Form.

Every member will receive in return the aggregated information.

## 2.3 Schedule

The market data covering quarter N should be sent as inputs to Squaris in the last complete week of the first Month of the quarter N+1, from Monday to Thursday the latest.

"Bad guys" will be potentially contacted by Squaris#1 on Friday

Squaris will send the feed-back, aggregating all the received information, before 4 working days after this date.

## 2.4 Segmentation

For the purpose of this process, a SIM Card defines any Smart Card used in a wireless device for network authentication and access purposes, regardless of the wireless technology supporting the mobile service (GSM, PDC, CDMA, etc...) as well as Embedded Secure Element (eSE),

defines a second secure chip embedded in a mobile device (in addition to the traditional SIM Card) used to secure mobile services and applications but without SIM functionality.

**Definitions:** Seven product segments, five main zones, fourteen sub-zones will be monitored in a matrix (all product segments will also be tracked per geographic Area).

#### 2.4.1 Geographic Areas:

##### Zone Americas:

**North America:** Canada, United States

**South America wo Brazil:** Antigua & Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Rep., Ecuador, El Salvador, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Neth. Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, St. Kitts and Nevis, St. Lucia, St. Vincent, Suriname, Trinidad & Tobago, Uruguay, Venezuela, Virgin Islands (US)

**Brazil:** Brazil

##### Zone Asia:

**Greater China:** China Mainland, Hong Kong, Macau, Taiwan

**India:** India

**Indonesia:** Indonesia

**Pacific Asia:** Australia, Bangladesh, Bhutan, Brunei, Cambodia, D.P.R. Korea, Fiji, French Polynesia, Guam, Kiribati, Lao P.D.R., Malaysia, Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nepal, New Caledonia, New Zealand, Northern Marianas, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu, Viet Nam

**Japan / Korea:** Japan, Korea

##### Zone Europe:

**Western Europe:** Andorra, Austria, Belgium, Cyprus, Denmark, Faroe Islands, Finland, France, Germany, Greece, Greenland, Guernsey, Iceland, Ireland, Italy, Jersey, Liechtenstein, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom

**Eastern Europe:** Albania, Bosnia, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia Montenegro, Poland, Romania, Serbia, Slovak Republic, Slovenia

##### Zone CIS:

**CIS Republics:** Armenia, Azerbaijan, Belarus Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan

**Russia/ Ukraine:** Russia, Ukraine

##### Zone MEA:

**Africa:** Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Rep., Chad, Comoros, Congo, Côte d'Ivoire, Dem. Rep of Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea Republic, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Morocco, Mozambique, Namibia, Niger, Nigeria, Réunion, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe

**Middle East:** Afghanistan, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, West Bank and Gaza (Palestine), Yemen

#### 2.4.2 Product Segments:

**Important:** All products segments will also be tracked per geographic Area!  
Totals must be the same in the first 5 segment tables

##### Segment 1: Memory size segment

- 32K & Less
- 64K (56K incl.)
- 128K
- 256K to 1Mb
- > 1Mb & more

The 32K segment will also reference lower capacity SIM Cards (e.g., 2K, 3K, 4K, 8K ...).  
The “1Mb & more” segment will also reference SIM Cards with memory capacity strictly higher than 1Mb.

Memory capacity is an addition of the EEPROM and Flash memory size of the SIM Card.  
ROM memory is not taken into account in this process.

##### Segment 2: Interoperable Java Card TM SIMs

- SIM Java Card TM 2.1.1 and more
- Proprietary cards: native OS or not interoperable Java Cards TM.

A SIM “Java 2.1.1 and more” must comply with any release greater or equal to 2.1.1.

##### Segment 3: 5G recommended SIM

- Recommended 5G SIM cards as defined in the Trusted Connectivity Alliance document “3GPP R15 5G SIM card: A definition” (file name: What-is-a-3GPP-R15-5G-SIM-card-20-11-2018-FINAL.pdf), November 2018.

##### Segment 4: “Form Factors”

- 2FF – Plug-in UICC or 2FF. 2FF Card is card with a format of 15mm x 25mm
- 3FF – Micro SIM, Mini UICC, 3FF, 2FF/3FF. 3FF Cards are card with a format of 12mm x 15mm or card with a double-cut of 12mm x 15mm and 15mm x 25mm
- 4FF – Nano SIM Cards with a format of 12.3mm x 8.8mm x 0.7mm, 4FF/3FF (excluded in 3FF), 4FF/2FF
- Triple SIM – 4FF/3FF/2FF
- Any solderable form factor (e.g. vQFN8, MFF1, MFF2, wafer level chip scale package...)

**Important:** in order to avoid counting two times certain SIM Cards, the Trusted Connectivity Alliance members will not include in their sales figures the SIM Cards or SIM modules they have sold to other Trusted Connectivity Alliance members or to affiliates controlled by other Trusted Connectivity Alliance members. To summarize:

- Do NOT count SIM Cards or SIM modules sold to Trusted Connectivity Alliance members (or to affiliates controlled by them)
- Do count SIM Cards or SIM modules sold to non-Trusted Connectivity Alliance members

- Do count SIM Cards or SIM modules you have bought from a Trusted Connectivity Alliance member

### Segment 5: Additional Features

**Important:** All additional features will also be tracked per geographic Area!

But there is no total for that because if a card uses two features (e.g.: sold as NFC & M2M MFF2), it will be account for 1 in NFC and 1 in M2M MFF2.

- NFC card – (U)SIM card with an embedded NFC technology & sold as NFC
- RSA card – (U)SIM card with RSA architecture & sold as RSA
- M2M soldered cards w/o eSIM – (U)SIM card with solderable form factors sold for Machine to Machine purposes, meaning any (U)SIM not used in a consumer handset, PDAs, Tablet PCs, Data cards. This field does NOT consider GSMA eSIM M2M, as this volume **MUST** be reported **ONLY ONCE** in the eSIM part of the spreadsheet.
- M2M Global w/o eSIM - (U)SIM card in all form factors (including soldered cards) sold for Machine to Machine purposes, meaning any (U)SIM not used in a consumer handset, PDAs, Tablet PCs, Data cards. This field does NOT consider GSMA eSIM M2M, as this volume **MUST** be reported **ONLY ONCE** in the eSIM part of the spreadsheet.

### Segment 6: Embedded Secure Element (eSE)

**Each member will need to report the number of eSE hardware and software sold worldwide (please note the split between hardware and software in the questionnaire).** Note that eSE OS licenses are considered software and that all form factors should be declared.

**Important:** One single number word-wide for eSE with no impact on other columns and totals

- A second secure chip embedded in a mobile device (in addition to the traditional UICC) used to secure mobile services and applications but without SIM functionality.

**Important:** in order to avoid counting two times certain eSE, the Trusted Connectivity Alliance members will not include in their sales figures the eSE hardware or OS license they have sold to other Trusted Connectivity Alliance members or to affiliates controlled by other Trusted Connectivity Alliance members.

### Segment 7: Embedded SIM (eSIM)

#### a) eSIM volume

- First, the declaration of discrete eSIM hardware volume (removable or solderable form factors) shall be done only in the eSIM table, meaning that eSIM volumes shall NOT be counted in other tables (techno, localization, memory...).
- No difference about memory size, form factor, type: M2M / Consumer Devices, no location information (geographical zone), no information about the technology & version.
- Define the eSIM as being an embedded SIM supporting dynamic loading & activation of MNO profiles as defined by GSMA.
- Do only count discrete eSIM hardware volumes sold to non-Trusted Connectivity Alliance members which will end up on the market as eSIMs.
- The reported volume is for a quarter and is not cumulative since the beginning of the year.

- vi. Only eSIM hardware volumes are counted, i.e. OS licenses are not counted.
- b) Number of Subscription Management (SM) platforms under operation
  - i. No difference about the location, technology and version, e.g. no distinction between M2M and consumer.
  - ii. No need to mention the number and type of operations.
  - iii. Define the Subscription Management platform as a remote entity (could be in the cloud or on-site) able to load, install and activate profiles in deployed eSIMs.
  - iv. Make no distinction between hosted or non-hosted platforms.
  - v. A platform is only serving one customer (e.g. if the platform is serving 20 different customers, the figure to report is 20)
  - vi. In case of VLA (Very Large Account), each country of this VLA where the platforms are under operation is counted, and NOT only one platform for all the countries.
  - vii. In case a SM platform is providing services for both M2M & Consumer Devices to the same customer, then you will need to report 2 platforms.
  - viii. In case of SM platforms, this will be provided by “units” and not in million units like all the other fields in this template.
  - ix. The field which is reported shall be a cumulated value (e.g. in Q2, Q1 & Q2 are to be reported). To be more specific, you must include a running total or cumulative total of all live platforms in operation (e.g. you never stop counting since the platform is “under operation”; DO NOT reset volumes each year but continue the total from quarter to quarter, year to year).
  - x. Only active platforms shall be declared. Be sure to only include platforms that are under operation, commercially live and fully deployed. I.e. do not count geo-redundant, staging, pre-production, test, proof-of-concept, trial or any other non-commercial platforms.
- c) Number of eSIM transactions
  - i. Do only count dynamic loading & activation of MNO profiles as defined by GSMA. Do not distinguish any other type of operation (load, install, delete...).
  - ii. Assumption: For Consumer Devices eSIMs, we are considering they need SM actions to be performed in order to become connected (meaning that eSIM Consumer Device are not coming to market with a connectivity profile by default).
  - iii. The reported volume is for a quarter and is not cumulative since the beginning of the year.
  - iv. Provide the worldwide figure as well as the split by region (America, Asia, Europe, CIS and MEA). Consider the regional information of the targeted eSIM on the field and NOT on the SM Platform performing the activation.
  - v. All the profile personalization done in the factory for M2M eSIM are not counted as a transaction.
  - vi. Any operation (single or multiple commands) consisting of activation or swap.
- d) Additional eSIM data requested
  - i. Volume of eSIM sold in solderable form factor
  - ii. Volume of eSIM sold in removable form factor
  - iii. Volume of M2M eSIM
  - iv. The reported volumes are for a quarter and are not cumulative since the beginning of the year.
- e) eSIM OS license
  - i. Declaration of GSMA eSIM Software sold by the Trusted Connectivity Alliance member during the period of this exercise (3 months), taking into account M2M and Consumer.

**Rule of 3:** The “rule of 3” means that at least 3 responses are needed to be considered in the aggregation process. If fewer than 3 participants provide data for a given cell, that cell in the final report will contain no information. Each member shall populate cells with only 2 kinds of values:

- Shipment volumes, which can also be “0” or
- The term “NA” if the member does not have this product in its catalog

**Note:** Each participant must complete all the cells even if there has been no shipments in the relevant quarter. Where the participant has not had any shipments in the relevant segment for over 12 months then the entry must be NA (Not Applicable). A participant may enter 0 (zero) where there have been no shipments in the relevant quarter but there have been shipments within the previous 12 months (unless the previous shipment was considered to be exceptional).

## 2.5 Format of Members’ Input and Feed-Back

- Sales in Million units of SIM Cards billed during a given period must be clearly indicated on a standard questionnaire (Standard format 0,000).
- Squaris#1 will acknowledge reception of the data to each sender.
- Data feedback (data aggregated by Squaris#2 from Members’ input) will be sent by Squaris#2 to Members by email and will include the number of respondent companies (e.g., “...the aggregated figures are attached including figures from all 9 member companies).
- Standard questionnaires are provided as annexes to this process document, which are to be used by Members.

## 2.6 Confidentiality

Squaris, official trusted partner of the Trusted Connectivity Alliance, is the neutral party chosen by the Trusted Connectivity Alliance Members to ensure the confidentiality and anonymity of this process.

To ensure a high level of confidentiality and anonymity, this process requires two (2) Squaris employees—Squaris#1 and Squaris#2—and the General Secretary. This is obviously not a full-time involvement.

SIM Market Monitoring Process participants (e.g. Marketing Directors & Marketing Analysts) shall NOT include any Board Member, including the Chairman, in the various email exchanges during the execution of the process.

The aggregation process:

- Prior to each SIM Market Monitoring Process, each Member will receive a new Member ID# from Squaris. This ID# shall be used as the file name for their completed reporting template or “questionnaire” (e.g. the questionnaire shall be named “company12345.xls”).
- Members will also receive two separate emails from the General Secretary prior to each SIM Market Monitoring Process. The first email will include a clean (no metadata) version of the questionnaire. The second email will include a password.
- After each Member completes the questionnaire, they shall ensure there is no metadata that identifies their organization (to do this, open the Excel file, click “File” tab, select “Info” then click the “Check for Issues” icon. Check each box to include all types of metadata in the



inspection and click “Inspect”. Review the results of the inspection in the Document inspector dialog box).

- Each Member shall zip AND encrypt their completed questionnaire using the password provided by the General Secretary. It is recommended that Members use a zip and encryption tool such as 7-Zip. Instructions are included in Annex 3.
- **Each Member will send the zipped and encrypted file to Squaris#1 via email. DO NOT send questionnaires to Squaris#2.**
- Squaris 1 will then provide each encrypted file to Squaris#2. Squaris#2 will unencrypt each file using a key provided by the General Secretary (the key contains the passwords matched with the Member ID#s). For more information about this administrative process, please see Annex 4).
- Squaris#2 will then aggregate the data and sent to all Members (see 2.5).

Squaris#1 will:

- Be the official liaison person with the Trusted Connectivity Alliance Members for this process.
- Assign a unique Member Identity Number (ID#) to each Trusted Connectivity Alliance Member for each process (meaning that a given ID# is valid for one process only) and shares the Member ID#s and the corresponding company names with the General Secretary. Only Squaris#1 and the General Secretary will be able to match the ID# and the corresponding Members.
- Communicate to Squaris#2 the list of Member ID#s.
- Communicate to each Member its assigned ID#.

As previously noted, each Member shall include the ID# in the file name of the questionnaire sent to Squaris#2. The Member shall NOT include any company identifiable information on the questionnaire itself, ONLY their ID#.

Squaris#2 will:

- Ensure that all Member questionnaires have been received (i.e., the questionnaires covering all the ID#s),
- Abide by the pre-defined process schedule,
- Flag data integrity by checking data in the questionnaires (i.e., checking if the total indicated in a given column or line corresponds to the sum of each figure in the line or the column),
- Aggregate the data received in a global feed-back form (see Annexes for examples) by adding all the figures sent by the Members in a global figure,
- Send final figures by e-mail to all authorized people (see below).
- Communicate the number of respondent companies.

If any problem occurs on any of the points listed above, Squaris#2 will notify the problem and the associated company ID# to Squaris#1. Squaris#1 will then communicate to ALL members by email any problems that occur (e.g. “Company #XYZ did not indicate the correct Quarter at the top of the questionnaire”). If this does not resolve the problem, Squaris#1 will then communicate directly with the Member contact person by phone, without divulging or requesting any confidential information, to ensure the Member submits the correct information via email to Squaris#1.

Squaris#2 shall keep both the questionnaires and the aggregated information confidential. Only Squaris#2 can have access to the passwords and questionnaires to be able to unencrypt the questionnaires (without being able to match the ID# and the Members).



One month after sending the final figures to Members, the questionnaires shall be destroyed by Squaris#2.

Members shall notify the General Secretary, Squaris#1 and Squaris#2 of any changes to their contact details (name, phone and email) or of any changes of position that would affect their involvement in this process.

## 2.7 Authorized People

Squaris shall not check for any company identifiable information on the questionnaires received from Members, except for company ID#s.

Squaris shall send the final figures to the following people:

- Trusted Connectivity Alliance Members' Marketing Directors at the time of issuance of the information,
- Trusted Connectivity Alliance Members' Market Analysts that have been registered (1 per company). Market Analysts must be registered with Squaris and the General Secretary by their company Marketing Directors. Only Marketing Directors can modify the registered Market Analysts.

## 2.8 Process Set-up

### Process V19.01

As of 8 April 2019, the Trusted Connectivity Alliance Board decided that every member of Trusted Connectivity Alliance will declare shipments according to the newly revised scheme. Those changes are reflected in the version of the process Ref. SAP001 V19.01 and in the questionnaire given in Annex 2.

## 2.9 Process Modifications

This process could be modified by an amendment subscribed by the Board and duly voted by the Trusted Connectivity Alliance Board during a Board Meeting session.

This amendment will necessitate issuing a new process document with a new reference mentioning the previous one that has been replaced.

## **ANNEX 1: Work required**

### **New process follow-up (from SAP001 V6)**

- New Members will be informed of the process when joining Trusted Connectivity Alliance
- Contact list: to be sent to Squaris
- Dispatch of contact details at Squaris (Squaris#1 and Squaris#2)
- Process is not correctly followed, the Board will be informed to make any decision they want (decision to stop, correct current behavior, change process or exclusion of the Member)
- Amendment proposal: Formal debate to modify the process

Use Excel sheet Trusted Connectivity Alliance SIM Market Monitoring Process-V19.01\_FINAL

[illegible]

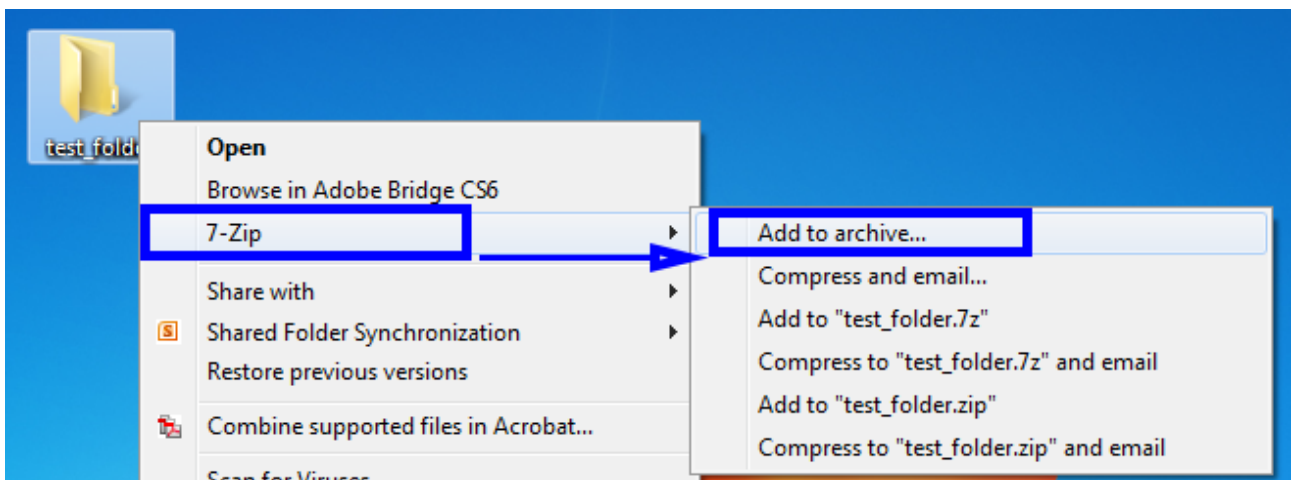
### ANNEX 3: Instructions for using 7-zip for zipping (compressing) and encrypting questionnaires

7-zip is a free file archiving tool that allows you to zip (compress or archive) files using AES-256 encryption method. You may download 7-zip using this [link](#). To zip and encrypt your questionnaire, please follow these instructions (you may also find these instructions online using this [link](#)):

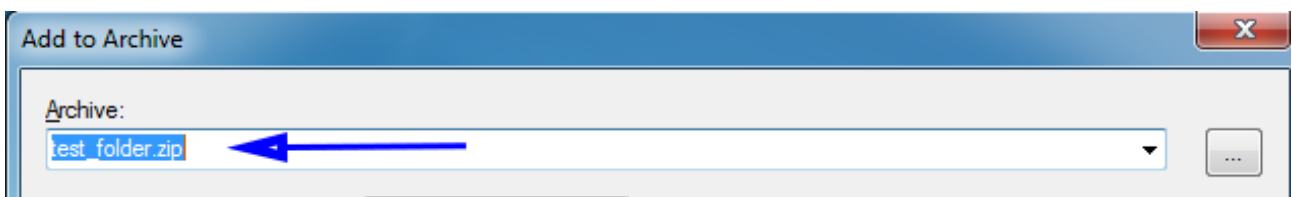
Once the software is installed, please follow these steps to encrypt a file or folder.

Step 1: Right click on the file / folder to be encrypted.

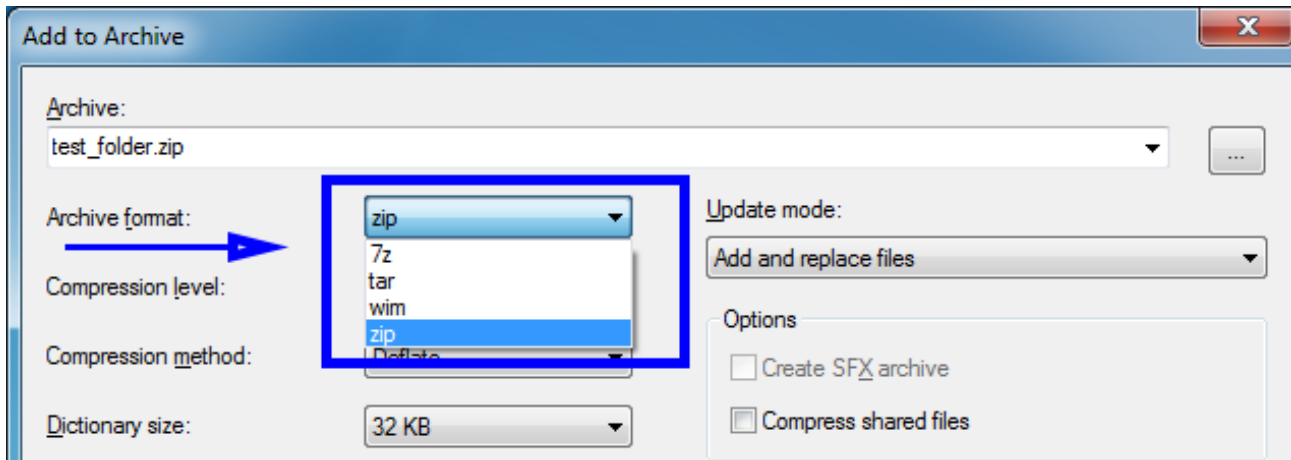
Step 2: Select “7-Zip” then “Add to archive...”



Step 3: In the Add to Archive window change the name of the archive you wish to create.



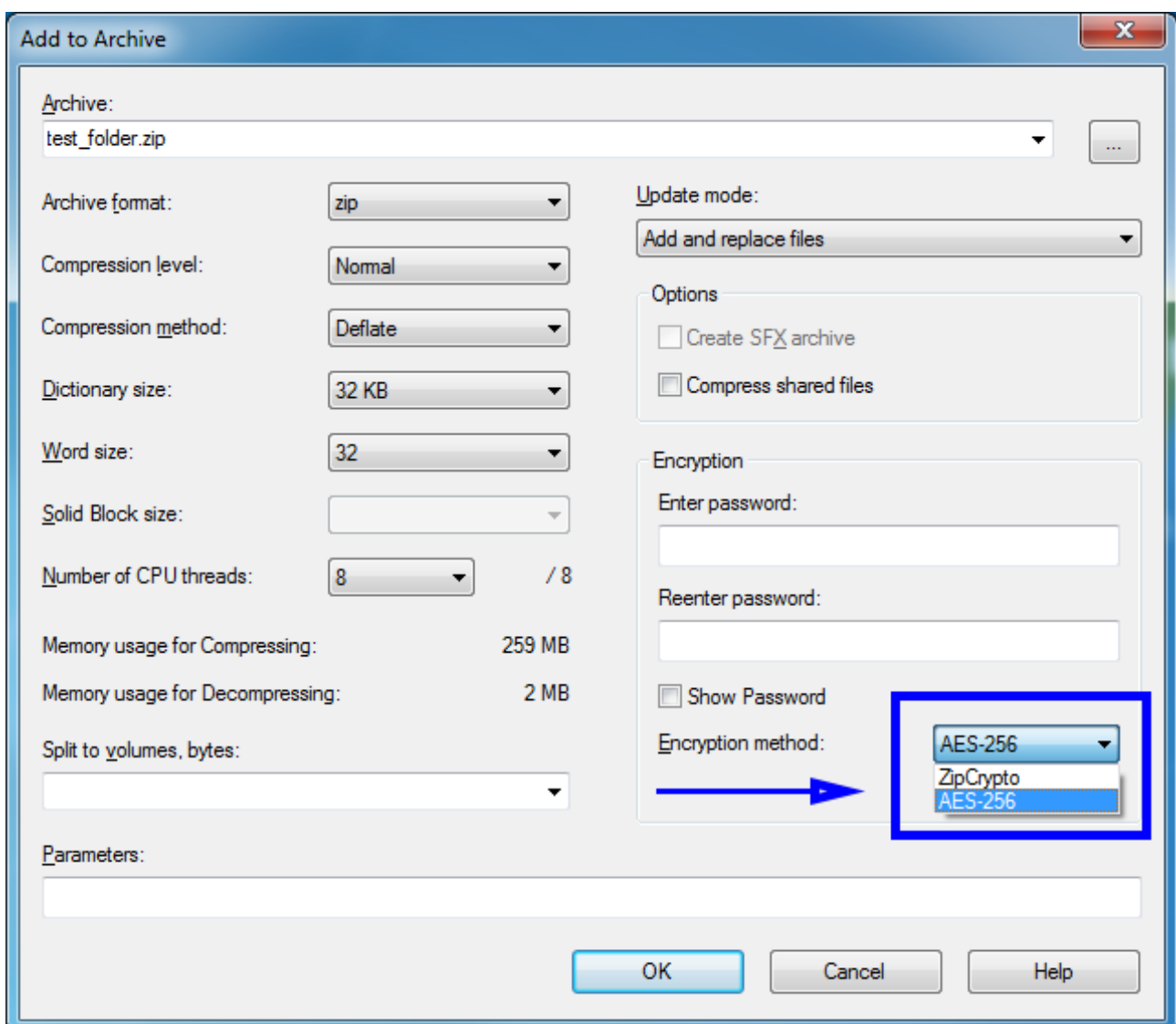
Step 4: Change the Archive format to "Zip".



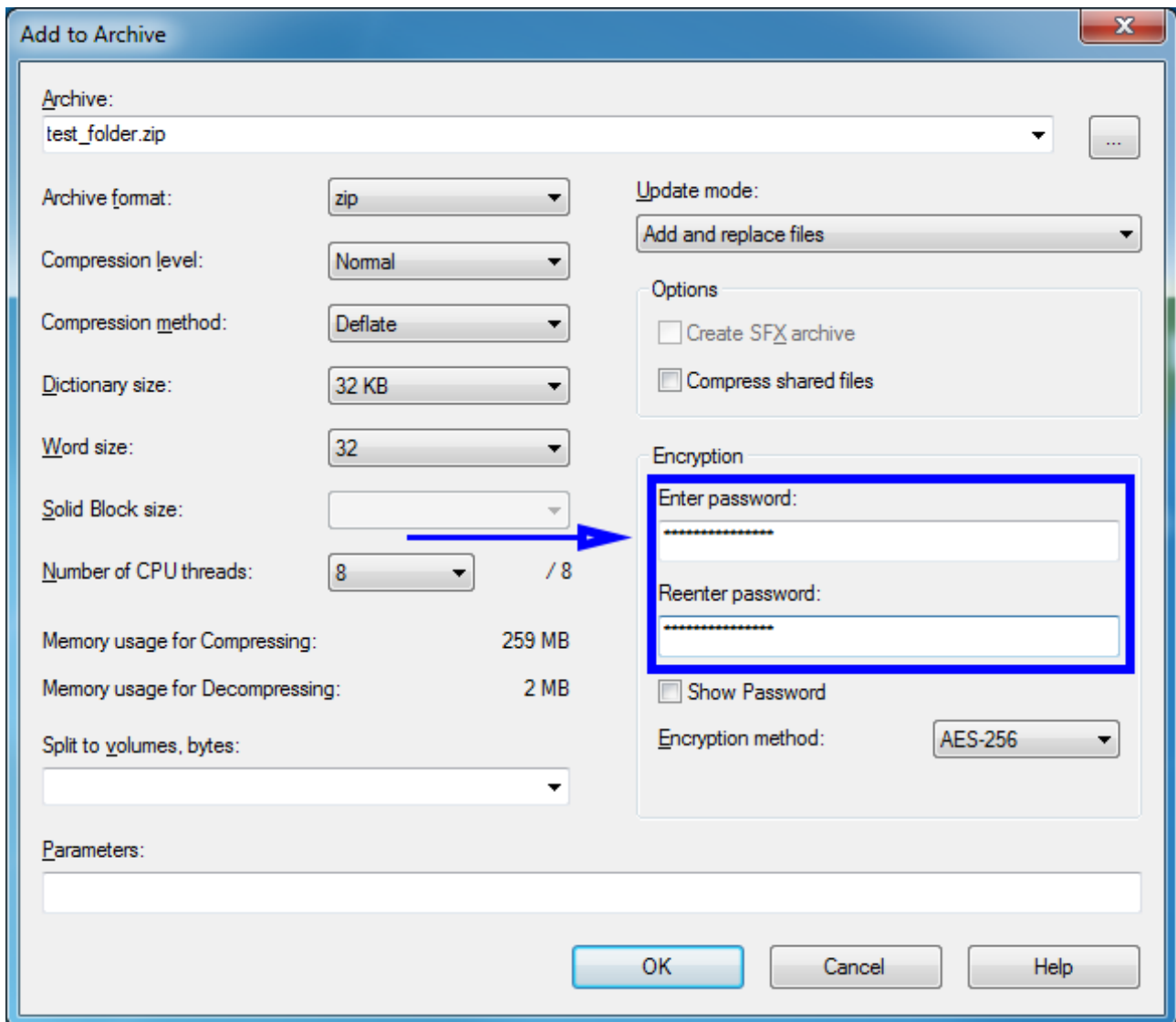
Step 5: Change the Encryption Method to “AES-256”.

There is a trade-off between using AES-256 and ZipCrypto. AES-256 is proven much more secure than ZipCrypto, but if you select AES-256 the recipient of the zip file may have to install 7-zip or another zip program to read the file contents. Selecting ZipCrypto may allow users to open the zip file in Windows without a zip program, but it does not provide adequate protection against attackers with modern cracking tools.

It is strongly recommended to use AES-256 to protect sensitive and confidential data.



Step 6: Enter a Password. Use a strong password with at least 8 characters containing upper and lowercase letters, and a minimum of one number.



Step 7: Select “Ok” to create the encrypted archive file. The new archive file will be located in the same folder as the original.

Best security practices recommend that you do not email the password with the Zip file as it could be intercepted in transit. It is better to call the recipient of the Zip file and convey the password over the phone.



## ANNEX 4: Administrative Process Flow for ensuring anonymity and confidentiality for the SIM Market Monitoring Process

Below is the process flow to ensure a high level of anonymity and confidentiality through email for the SIM Market Monitoring Process.

