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Fruit Export Industry Guidelines on Implementation of IMO, SOLAS Chapter VI, Part A, Regulation 2: Shippers Mandatory Verification of the Gross Mass of a Packed Container (VGM)

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VGM Guideline Part 1 of 3: 21st April 2016

To fruit packhouse managers, fruit shippers (exporters), logistics and IT service providers, shipping lines and interested stakeholders,

In considering the various aspects concerning the requirement by the International Maritime Organization (IMO), Safety of Life at Sea (SOLAS) convention to verify the gross masses of packed containers for export, a three part set of guidelines will be published to assist the fruit industry in determining best practice to comply with the requirements; where compliance is applicable. There are three main areas which have been identified in considering this requirement –

1. Implementation Guidelines to obtain the Verified Gross Mass (VGM) of Containers in terms of the IMO Requirements,
2. Implementation Guidelines to Notify Shipping Lines the Declaration of Verified Gross Mass (VGM) of Containers, and
3. Implementation Guidelines to Verify the Container Gross Mass through the SAMSA Appointed Third Party Certification and Approval Process under Method 2.

These guidelines are considered to be the most effective and practical measures that can be recommended, the guidelines should be considered for reference purposes only. Individual shippers (exporters) may choose to consider these guidelines or adopt alternative measures to adhere to the IMO requirements.

VGM Guideline Part 1: Implementation Guidelines to obtain the Verified Gross Mass (VGM) of Containers in terms of the IMO Requirements.

1. Methods to Determine the VGM of the Packed Container.

In terms of the IMO requirements, two methods are prescribed by which a shipper may obtain the VGM of a packed container, as follows –

1.1. ***Method 1: Upon the conclusion of packing and sealing a container, the shipper may weigh, or have arranged that a third party weighs the packed container, for example using a weigh bridge*.**

Where the above method 1 has been determined to be the most practical means to determine the VGM of a container, the below points should be considered in terms of determining the VGM using this method –

1.1.1. By arrangement, the packed and sealed container can be weighed independently on/with certified equipment to determine the total VGM of the container. The mass of the cargo and the container are measured as a single unit of mass representing the VGM of the container.

1.1.2. By arrangement, at facilities which fruit containers are to be packed that are equipped with certified weighbridges. The method deemed to determine the VGM of the packed and sealed container is as follows. 1) The vehicle carrying the empty container is weighed as a single unit of mass prior to the container being packed = mass (A). 2) The container is then packed and sealed at which point the vehicle and the container is weighed again as a single unit of mass = mass (B). The verified mass of the contents of the packed and sealed container is deemed to have been obtained by subtracting the 2nd mass recorded from the 1st mass recorded. E.g. mass (B) – mass (A) = verified mass of the container contents (C). 3) To determine the VGM of the container, the verified total mass of the contents of the packed and sealed container (C) can be added to the tare mass of the container (D) (as indicated on the container door and/or the Container Safety Convention (CSC) plate attached to the container). E.g. mass (C) + mass (D) = VGM mass (E). (See SAMSA MN18 of 2016 – Section 9).
This method to determine the VGM of a container is thought to be a very practical approach. Many fruit container packing points (e.g. cold stores and/or fruit packhouses) have or are installing weighbridges using the above method to determine the VGM of containers.

1.1.3. By arrangement, at facilities which receive fruit containers for loading on vessels that are equipped with certified weighbridges. The method deemed to determine the VGM of the packed and sealed container is as follows. 1) The vehicle carrying the packed and sealed container is weighed on arrival as a single unit of mass = mass (A). 2) The container is off-loaded from the vehicle at which point the vehicle alone is weighed again = mass (B). The VGM of the packed and sealed container is deemed to have been obtained by subtracting 1st mass recorded from the 2nd mass recorded. E.g. mass (A) – mass (B) = VGM mass (C). (See SAMSA MN18 of 2016 – Section 9).
This method to determine the VGM of a container is also thought to be a very practical approach in the case where fruit containers are loaded on board/on deck of reefer ships at fruit export terminals. However in this case, the timing of the VGM declaration to the carrier may need to be considered if the containers are delivery direct to vessel. Container terminals etc could also adopt this method to determine the VGM of packed and sealed containers. The weighing of vehicles could be by weigh in motion and or weigh bridge devices located at entrance and exit areas, or at the container interchange zones.

1.1.4. In terms of the IMO guidelines (MSC. 1/Circ.1475 of 9th June 2014) section 11 – Containers on road Vehicles. If the verified mass of a packed container is obtained by weighing the container while it is on a road vehicle, (e.g. chassis or trailer), the tare mass of the road vehicle (and, where applicable, the tractor) should be subtracted to obtain the VGM of the container. The subtraction should reflect the tare mass of the road vehicle as indicated in their registration documents as issued by the competent authority of the State where these assets are registered.

1.2. ***Method 2: The shipper (or, by arrangement of the shipper, a third party), may weigh all packages and cargo items, including the mass of pallets, dunnage and other packing and securing material to be packed in the container, and add the tare mass of the container to the sum of the single masses using a certified method.***

Where the above method 2 has been determined to be the most practical means to determine the VGM of a container, the below points should be considered in terms of determining the VGM using this method –

1.2.1. By arrangement, at fruit packhouses or container packing points (e.g. cold storage facilities) the weighing of individual pallets of fruit either, 1) after production at the packhouse or, 2) at the intake point of the container packing points or, 3) at the point which the container is to be packed with fruit. It is deemed that the most feasible and practical point at which pallets of fruit should be weighed is at the fruit packhouse upon completion of palletizing of fruit pallets. Where this is deemed not to be feasible and/or practical, then consideration should be given to point 2 and 3 above; by arrangement of the container packing facility equipped with certified weighing equipment (e.g. at the contracted cold storage facility). The verified total mass of the sum of all pallets within the packed and sealed container = mass (A) is added to the tare mass of the container = mass (B) (as indicated on the container door and/or the Container Safety Convention (CSC) plate attached to the container) to determine the VGM of the container = mass (C).

In terms of the above, consideration should be given to the following important notes –

a) Obtaining the verified mass of packed containers under method 1 will not be required to be certified by an agency appointed by the South African Maritime Safety Authority (SAMSA). The weighing equipment or weighbridges used are only required to have a valid Verification Certificate which is endorsed with a Type Approval Number. See section 2 below.
b) Obtaining verified masses under method 2 will be required to be certified by an agency appointed by SAMSA. More information on the certification audit required as per method 2 used to obtain the VGM of containers will follow in part 3 of the FSA guidelines: Implementation Guidelines to Verify the Container Gross Mass through the SAMSA Appointed Third Party Certification and Approval Process under Method 2.
c) Fruit exporters (Shippers) and/or packhouses domiciled outside South Africa using South African ports for exporting of fruit in containers must refer to SAMSA MN18 of 2016 section 11. Shippers Domiciled Outside South Africa.
d) To avoid further complications and additional costs, it has been advised by many fruit exporters that the weighing of pallets at fruit packhouses using certified equipment is deemed the most feasible and practical point at which to obtain verified pallet masses. Although this will largely be determined by the practicalities and/or ability for a fruit packhouse/s to weigh fruit pallets. In considering this, alternative options can be explored as outlined in section 1.1 above. Fruit packhouses should consider the scenario when supplying fruit for export to multiple export agents. Export agents in turn may contract packing facilities with differing requirements to ascertain the VGM of containers. Certain export agents may use pack facilities equipped to ascertain the VGM using methods as outlined in 1.1 above, which does not require certified pallet masses to determine the VGM of containers. Other pack facilities will use methods as outlined in 1.2 above requiring certified pallet masses to ascertain the VGM of containers.

2. Mandatory Requirements for Weighing Equipment used in the Weighing Process.

In terms of the IMO Guidelines (MSC.1/Circ.1475 of 9th June 2014) section 7 on Equipment, the scale, weighbridge, lifting equipment or other devises used to verify the gross mass of the container, in accordance with either Method 1 or Method 2, should meet the applicable accuracy standards and requirements of the State in which the equipment is being used. SAMSA has stipulated in the SAMSA Guidelines (MN18 of 2016) section 7 on Weighing Equipment, that the following mandatory requirements for weighing equipment should be noted –

2.1. All weighing equipment used for either Method 1 or Method 2 must have a Verification Certificate which is endorsed with a Type Approval Number. See also: NRCS Legal Metrology - Type Approval

2.2. Weighing equipment must be verified periodically in accordance with the regulations pertaining to the type of weighing equipment being used. Currently non-automatic weighing instruments including vehicle scales must be verified every 24 months.

2.3. Verification Laboratories, who also may be suppliers or manufacturers of weighing equipment, must be accredited by the South African National Accreditation System (SANAS) according to SANS10378 to verify weighing equipment.

2.4. Once the Verification Laboratory is accredited by SANAS they are designated by the National Regulator for Compulsory Specifications (NRCS) to conduct verifications on weighing equipment.

2.5. Verification Officers conducting verifications for Verification Laboratories must be appointed in writing, competent and work within the ambits of their listed scope.

2.6. The purpose of verifying weighing equipment is to ensure the equipment is accurate and complies with legislation.

2.7. **SOLAS does not provide for a margin of error**. The VGM shall be obtained under both Method 1 and Method 2 by using weighing equipment that meets the applicable accuracy standards and requirements in the State in which the equipment is being used i.e. the Legal Metrology Act, 2014.

Many fruit packhouses and container packing facilities have weighing equipment (in the form of floor scales and/or weighbridges) for the purpose of measuring pallet and/or container masses etc, this equipment may or may not be certified and endorsed with a type approval number. In terms of the above requirements it is important to ensure that existing weighing equipment which will be used to weigh masses in the VGM verification process complies with the above requirements. This implies that weighing equipment be certified with a valid certificate of approval with a SA Type Approval Number. Equipment that does not comply with this requirement will need to be assessed for type approval and then if applicable undergo calibration and certification by a verification laboratory accredited by SANAS. Where equipment is not in place or does not comply and/or cannot be type approved it may be necessary to replace the existing equipment and procure new equipment. There are many suppliers of weighing equipment in South Africa which supply the required types of scales and/or weighbridges that comply with the requirements on weighing equipment. Many of these suppliers are also accredited by SANAS to undergo verification on weighing equipment and conduct periodic audit assessments as required for that specific equipment. For more information pertaining to requirements on compliant equipment for the VGM regulation, it is advisable to contact an accredited equipment supplier and/or a SANAS accredited laboratory. A detailed list is available on the SANAS website in the link: Directory of Accredited Facilities, click on the Legal Metrology link and 1) select under Disciplines – "Weighing", 2) select under Accreditation Status – "Accredited", and 3) select by "Province" (Also note that many accredited laboratories are registered in a province with satellite braches in other provinces. As is in the case of Gauteng the H/O and laboratory is registered in Gauteng with branches located in other provinces which are not indicated on this list). The accredited certification laboratory will also assist with the necessary requirements and procedures as far as the audits and calibration on the specific type of equipment is concerned.

3. System Recording of [Verified] Masses Pertaining to the EDI Transmission of the Container VGM to Shipping Lines and Terminals.

In terms of the IMO Guidelines (MSC.1/Circ.1475 of 9th June 2014) section 6 on Documentation, declaring the VGM under Method 1 and Method 2 to shipping lines is indicated to be by way of a declaration in the form of a shipping document. The document can be part of the shipping instructions or a separate communication. In terms of section 6.2, the document declaring the VGM of the packed and sealed container should be signed by a person duly authorized by the shipper. The signature may be an electronic signature or may be replaced by the name in capitals of the person authorised to sign it. Section 6.3 of the guidelines highlights the following points –

3.1. It is a condition for loading onto a ship to which the SOLAS regulations apply that the VGM of a packed container be provided, preferably by electronic means such as Electronic Data Interchange (EDI) or Electronic Data Processing (EDP), to the ships master or his representative and to the

terminal representative sufficiently in advance of ship loading to be used in the preparation and implementation of ships stowage plan.

3.2. Because the contract of carriage is between the shipper and the shipping company, not between the shipper and the port terminal facility, the shipper may meets its obligation under the SOLAS regulations by submitting the VGM to the shipping company. It is then the responsibility of the shipping company to provide information regarding the VGM of the packed container to the terminal representative in advance of ship loading.

3.3. The master or his representative and the terminal representative should enter into arrangements to ensure the prompt sharing of verified container gross mass information provided by shippers. Existing communication systems may be used for the transmission and sharing of such verified container gross mass information.

Considering the above, it is therefore deemed practical that all [verified] masses obtained; as per section 1 above, be registered into the relevant IT operating systems in place at all the applicable weighing points.

In the case of obtaining the VGM under method 1 as per 1.1 above, the measured mass or masses used to determine the VGM of a container can be recorded electronically in the IT operating system. The format and contents of the declaration including mass calculations can be structured as outlined in SAMSA MN18 of 2016 section 6 – Documentation (Container Mass Verification Declaration). The declaration and/or the VGM file transfer can then be submitted to shippers and in turn to the shipping company/shipping line and loading terminals by means of EDI/EDP methods.

In the case of obtaining the VGM under method 2 as per 1.2 above, by registering the pallet masses electronically, the information pertaining to the [verified] pallet masses can be transferred or transmitted electronically. This will enable pallet masses to be transferred from the point at which the [verified] masses were registered/recorded, to the shippers (exporters) IT operating systems and to the container packing facility IT operating systems by means of electronic transmission of data files (PO files etc). The [verified] pallet masses can then be made available electronically for the purpose of populating the VGM of the packed container. The format and contents of the declaration including mass calculations can be structured as outlined in SAMSA MN18 of 2016 section 6 – Documentation (Container Mass Verification Declaration). The declaration and/or the VGM file transfer can then be submitted to the shipping company/shipping line and loading terminals by means of EDI/EDP methods.

In this case where pallet masses are weighed per method 2, it may also be advisable to record the verified pallet masses physically by marking the pallet as well as recording pallet masses on the out consignment notes; as a means of cross reference. [Verified] Pallet masses can be obtained and then registered/recorded on IT operating systems as follows –

I. Verified masses of pallets are registered/recorded on IT operating systems at the packhouse, or
II. Verified masses of pallets are registered/recorded on IT operating systems at the container packing facility.

Save for certain instances, the most practical method deemed to declare the VGM of packed containers would be by EDI or EDP methods. Fruit South Africa representatives will be scheduling meetings with all relevant shipping lines to determine the applicable method/s to declare the VGM of containers. This should include all the information requirements to be contained within the shipping document or declaration of the VGM. A summary of this will be outlined in part 2 of the FSA guidelines: Implementation Guidelines to Notify Shipping Lines the Declaration of Verified Gross Mass (VGM) of Containers.

<u>Electronic Systemised Recording of Masses</u>

It would be advantageous in terms of the VGM certification audit to be conducted by a SAMSA third party agent as outlined under method 2, that weighing equipment register/record masses electronically. This can be done by linking the weighing equipment measurements to the applicable IT operating system. In some cases the IT operating system can be updated to register/record masses electronically. In the case of weighing pallets

in terms of 1.2, the pallet mass can be linked to the pallet ID systematically by means of a barcode scanner. In the case of weighing containers in terms of 1.1, the recorded masses can be linked to the container number and booking reference number electronically. IT system providers or companies that provide weighing equipment may provide the technology and equipment to register/record masses electronically. The IT operating system service provider/s should be consulted for more information pertaining to this aspect.

Recording of Pallet Masses to Obtain Average Nett and Gross Carton Masses

Once the verified mass of pallets has been ascertained, it may also be possible to calculate the average gross and nett masses of cartons of fruit. It could be advantageous to receive verified gross pallet masses to determine average carton masses when booking shipments with shipping lines as well as ascertaining average carton masses supplied to receivers. Another important aspect to consider is where pallet masses are recorded, it will provide the ability to ascertain the load mass distribution on vehicles in terms of compliance to road traffic regulations.

4. Conclusion.

All stakeholders are encouraged to familiarize themselves with the IMO, SOLAS requirements which will become mandatory and official on the 1st July 2016. The practice of declaring the VGM of packed containers for export will over time become common practice as part of the shipping process. The following official documents are available for further reference –

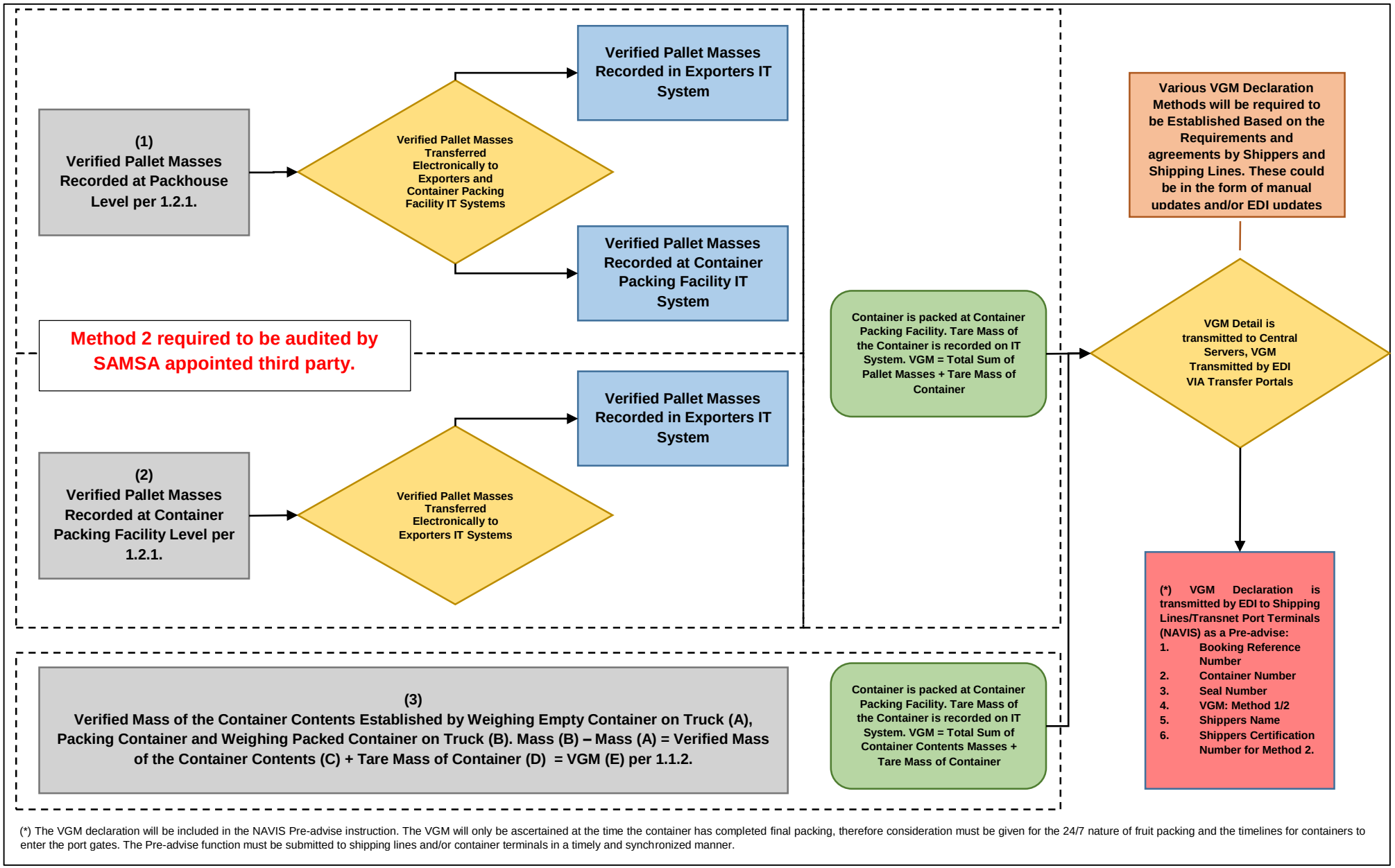
1. IMO, SOLAS Chapter VI, Carriage of Cargoes and Oil Fuels, Part A, Regulation 2 – Cargo Information, Section 4 – 6 (Amendment to include the requirement for the verification of the gross mass of containers)
2. IMO Guidelines Regarding the VGM of a Container Carrying Cargo (MSC.1/Circ.1475 – 09/06/2014),
3. SAMSA Guidelines on the Implementation of SOLAS VI Regulation 2 Amendment: Verification of the Gross Mass of Packed Containers (SAMSA MN11 of 2015, SAMSA MN25 of 2015 and SAMSA MN18 of 2016),
4. South African Legal Metrology Act, 2014 (Act 9 of 2014),
5. South African Merchant Shipping (Carriage of Cargo) Regulations, 2004.

It is further recommended that due to the Enforcement and Penalties for Non Compliance as outlined in section 16 of SAMSA MN18 of 2016, that human engagement in the recording and transfer of masses and the declaration of the VGM to shipping lines and/or terminals should be limited as far as possible to avoid the potential for errors.

Disclaimer:

The information provided in the FSA guidelines are merely proposals that are considered to be the most feasible and practical methods for the fruit export industry to comply with the IMO, SOLAS requirements. Shippers and service providers may consider alternative methods to comply with the requirements which fall out of the scope of the FSA guidelines. All information provided within the FSA guidelines have been considered after consultation with the relevant authorities and stakeholder groups. While the FSA guidelines have been drafted in good faith, FSA and constituents accept no liability for actions taken by using the information contained herein. All official guidelines and applicable state authorities and/or agents must be the overarching reference point in terms of the implementation of the SOLAS requirements.

Diagram 1: Methods for Electronic Transfer of Verified Masses from Points of Weighing to Points of Container Packing with EDI of the VGM Declaration to Shipping Lines via EDI Transfer Portals.



(*) The VGM declaration will be included in the NAVIS Pre-advise instruction. The VGM will only be ascertained at the time the container has completed final packing, therefore consideration must be given for the 24/7 nature of fruit packing and the timelines for containers to enter the port gates. The Pre-advise function must be submitted to shipping lines and/or container terminals in a timely and synchronized manner.