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FROM SPACEX SUPPLY CHAIN

We are pleased to announce our first SpaceX Supplier Newsletter. In order to meet our aggressive challenges and time lines it is important to further strengthen our continued partnership. 2018 was a record year for SpaceX with 21 successful launches, including the exciting launch of Falcon Heavy.

2019 promises to be a similarly critical year with launch of our SpaceX Crew Demo-1 mission and venture into the Starlink and Starship programs. Our suppliers are critical to ensuring that we deliver these goals on time and with uncompromising quality.

This newsletter is a tool to tighten our commitment to quality, reliability and delivery through direct information sharing of critical program and updates.

In this edition of the newsletter, we bring you details around our new and improved Supplier Scorecard with objective of portraying a more holistic view of supplier quality and delivery performance. It is important that together we use the information to drive our relationship in the direction of continuous improvement.

In addition to the Scorecard, updates to our Source Inspection and eCert programs are highlighted. Every newsletter will contain key quality requirement changes, updates and a listing of newly created or revised SpaceX documents and specifications.

It is critical to our configuration management that we are working together to the most accurate and current documentation.

We hope that you find this newsletter as a helpful aid to improve communication and visibility to our important programs and changes.

Your feedback on additional information that we can include in upcoming issues is always welcome and appreciated to help us improve and succeed in 2019! Please ensure that you work with your Purchasing and Supply Chain Reliability key contacts if you have any feedbacks, concerns or questions.

Finally, we would also like to take this opportunity to especially thank you, our suppliers, who have played an integral part in ensuring SpaceX success.
Thank you for your continued effort in our mission to Mars and enabling our ultimate goal of making humanity a multi-planetary species. You are a critical partner in revolutionizing space technology with us, and because of this we want to ensure that you receive the most up to date quality and delivery performance information to support continued supply chain success.

We are happy to announce a Supplier Scorecard revision, targeted for release in Q2 of 2019. The objective is to portray a more holistic overview of a supplier’s quality and delivery performance that can be used as a baseline for communication between suppliers and SpaceX. This will be done by changing what metrics affect the scores, how they are calculated, and providing the supplier all the data used to calculate those scores.

Most of the changes are happening with the quality scoring portion. The first two quality metrics, Vendor-caused Issues and SRIs (Supplier Request for Information), will now be calculated on a piece part level instead of on a Purchase Order Line level. This will move these metrics closer to a part yield metric. We removed the Hold score and have replaced it with three new scores: Source Inspection, eCerts and Containment. Source Inspection score will be a supplier’s performance during source inspections on a Purchase Order Line basis. Next is eCerts, our receiving documentation certification. This score will represent how often suppliers pass their documentation of a Purchase Order without rejection. If a supplier does not have the eCert program or Source Inspection, the weight of those scores will be redistributed across the other quality scores. The Containment score will indicate whether any of the vendor-caused issues lead to SpaceX needing to execute a containment. All of these five scores together will form a holistic quality score representing 75% of the overall Supplier Grade.

On the Delivery side, we have modified the OTTP (Original Time To Promise) score and added two Acknowledgment scores. For OTTP, we will now count Purchase Order Lines as being late if the OTTP date is missing. However if the part is a quick-turn item and arrives within 7 days of being released, it will count as on time. Also, to allow us to track supplier engagement and make delivery more representative, we have added the percentage of times a supplier acknowledges Purchase Orders sent to them. Lastly, we will also be tracking what percentage of Purchase Orders are acknowledged within 72 hours. These three scores will make up the delivery score which will represent 25% of the overall Supplier Grade.

In conjunction with these new scores, we will be rolling out training and documentation to better understand the scorecard and its contents. In addition, we will be providing all the background data for each of the scores. Each score will have its own individual data file to help improve clarity and provide each supplier the ability to re-calculate their own scores. We look forward to sharing our new scorecard with you soon.
**SOURCE INSPECTION**

*Elizabeth Sondecker; Manager, Supplier Quality Assurance*

In early February the Source Inspection Program made a few changes that impact all suppliers. These changes (see the summary below) have improved our scheduling process and are helping to provide more consistency for both inspectors and suppliers. We should be able to fulfill most requests within 3-5 days of the originally requested date and will respond if unable to schedule an inspection on the requested date. We understand how much source inspection scheduling can impact supplier delivery deadlines and want to be as transparent as possible with our ability to support.

**Operational Changes as of 2/4/2019:**

1. Any requests submitted after 3pm supplier local time will have no guarantee of being scheduled on the following day (if that is the requested date).

2. Suppliers must use the SpaceX Excel submission form or the request will not be scheduled.

3. SpaceX manager-level approval (from Engineering or Purchasing, for example) will be required for same day requests if a change in resourcing is required. This approval ensures that the part is a Production priority.

4. Scheduling preference will be given to suppliers who submit a full or half day of work. Suppliers that submit a single PO line may be de-prioritized unless we have SpaceX communication that the PO line is a priority. Please have a critical mass of work when submitting source inspection requests.

One additional change suppliers should be aware of is related to SPX-00040457 SpaceX Measurement Requirements and Guidelines. These guidelines are available on SpaceX.com/legal and were added to SPX-00007672 SpaceX Supplier Manual in mid-December 2018. See the refined requirements for CMM programs, and how they’ll be audited in Source Inspection, below:

**Deadline for updating CMM programs to meet SPX-00040457 Guidelines:**

- Suppliers to update all programs that were created prior to 12/31/2018 by 4/1/2019
- Any program that was created or revised on or after 1/1/2019 should meet probe density requirements at this time

Source inspectors may audit any new or revised programs during a routine Source Inspection event, either by auditing different feature types or by reviewing the entire program for compliance.
SPACEX eCerts EXPECTATIONS

Christian Green; Sr. Manager, Supply Chain Quality Assurance

eCerts or Electronic Certificates provides a process for vendors to submit their certificates and paperwork electronically before parts are shipped to SpaceX.

Benefits to Suppliers:
- Errors are caught prior to shipping, allowing the supplier to more easily address.
  - Prevents issue ticket creation at SpaceX which more negatively impacts the supplier scorecard.
- Product receipt at SpaceX is expedited, preventing delays at Receiving Inspection.

eCert Process:
- Complete eCert Validation Report (SPX-00035967, available on spacex.com/legal) and email to SpaceX with attached shipment documents as required by the PO per SPD-00035912.
- SpaceX receiving inspectors review the attached document package and either accept, or reject with feedback.
  - If rejected, supplier addresses issues and resubmits.
- Once accepted, supplier ships product and includes emailed acceptance document along with the packing slip as the only required documents to accompany the shipment.
**SPACEX eCerts EXPECTATIONS**

*Cont.*

- For Purchase Order Requiring Source Inspection (QC 17)
  - Source Inspection is transitioning this month to facilitating all requests for source inspection through eCerts
    - Suppliers with open purchase orders requiring source inspection will be contacted throughout this month and instructed on when their cut over date is to eCert requested source inspection
    - Training on how to request source inspection via eCerts will be provided via WebEx conference
  - Suppliers not currently enabled for eCerts will be contacted by their buyers and set up
    - Setup consists of: ensuring the supplier personnel that will be submitting eCerts are setup in the SpaceX system as Quality Contacts, and enrolling those individuals in an online training course

- **ALL OTHER PURCHASE ORDERS**
  - SpaceX is working quickly to ensure all shipments flow through eCerts
    - Over the coming weeks, buyers will be reaching out to onboard each supplier to eCerts
  - SpaceX is allocating additional receiving inspection bandwidth to reviewing eCert submissions in an effort to reduce turnaround times
    - Beginning this month, turnaround times for all eCert submissions should be less than 1 business day for non-prioritized shipments
    - eCerts for SpaceX prioritized shipments should be less than 2 hrs.
## REVISED SPACEX SPECIFICATIONS

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SPACEX SUPPLIER UPDATE

Vibhor Jain; Manager, Supply Chain Quality Systems Engineering

SpaceX Supplier Manual (SPX-00007672)

Quality Systems Requirements

- Change: The supplier shall control Non-deliverable software (i.e. CNC programs, testing software, etc.); these should be controlled independently of part revisions.
- Implementation: It is critical that the seller has control over configurations and unauthorized changes make to non-deliverable software, verification of these control shall be part of SpaceX surveillance audits.

Anodizing

- Change: Unless otherwise specified, after performing anodizing per MIL-A-8625, AMS 2482, MIL-A-63576 or any other aluminum anodizing specification, apply touch-up chemical conversion coating to rack marks per MIL-DTL-5541, Type 1, Class 1A, using Alodine 1132 or equivalent.
- Implementation: Touch-up on the rack marks per MIL-DTL-5541, Type 1, Class 1A using Alodine is an acceptable process.

Notification of Facility Change

- Change: Sellers are prohibited from relocating any production, manufacturing, and/or processing facilities during performance of a SpaceX Purchase Order without prior written notification to SpaceX, and written consent from SpaceX. This is necessary to afford SpaceX an opportunity to examine such facilities for compliance with quality and delivery assurance requirements, including necessary approvals. In addition, if there is a change in senior management the Seller shall notify SpaceX.
- Implementation: This change was made to reconcile SpaceX Terms & Condition and Supplier Manual requirements. Unauthorized delegation of seller’s duties during performance of a purchase order is not acceptable and requires SpaceX prior approval.

Supplier Scorecards

Change: A failing Scorecard rating (a D or F rating is failing in a letter rating system) in quality or delivery category for two consecutive quarters may result in the Supplier being placed on probationary review. Corrective action must be initiated at the request of SpaceX. Such notification may be verbal or written. Failure to plan and execute appropriate, effective corrective action may result in disqualification.

- Implementation: SpaceX has updated its Supplier Scorecard failing rating to ‘D’ or ‘F’ and requires suppliers to take corrective action to improve their performance. SpaceX may choose to initiate a Probationary review with the supplier to track each corrective action.
SPACEX SUPPLIER UPDATE

Cont.

SpaceX Supplier Manual (SPX-00007672)

Supplier Portal
- Change: SpaceX prefers that our suppliers use the Supplier Portal located at https://supplierportal.spacex.com for acknowledgement of Purchase Orders and other transactions. Suppliers not already active on the portal can e-mail supplier-portal-helpdesk@spacex.com or their primary SpaceX contact for onboarding.
- Implementation: Use updated email "portal-helpdesk@spacex.com" for supplier portal onboarding requests.

Subcontracting Special Processes
- Change: The Seller shall certify all sub-contracted special processes either by providing a copy of sub-contractor’s CoC or providing a list of special processes and SpaceX approved subcontract supplier used for each process.

SpaceX Quality Clauses (SPX-00000874)

QC 10a/b: Raw Material Traceability & Raw Material Test Results:
- Change: The Seller shall furnish a certificate traceable to lot, batch, block, or heat number of the melter and producer. The certificate shall list the melter and producer, if not the same, for metallic material. Certifications generated by the producer shall attest to the conformity of the material or be signed by the material supplier’s authorized quality representative, and indicate the representative’s title. Certification to conflicting forms of material is forbidden. Seller shall provide material to specification with no exceptions or addendums. Material shall not be provided as “chemistry only,” “capable,” “heat-treatable,” or with other specified exceptions unless explicitly requested on the controlling purchase order, drawing, or specification as appropriate. For non-metallic raw materials a Certificate of Analysis is acceptable in lieu of a Certificate of Conformance or Material Certificate.
- Implementation:
  - Sellers are required to list Melter and/or producer in CoC or Material Certificate or COA.
  - Certificate of Analysis is an acceptable document to meet requirements of QC 10a or 10b.

QC 54: NDT Technique Approval:
- Change: Documentation required updated to: A copy of SpaceX approved NDT Technique Sheet.
- Implementation: Suppliers are required to submit a copy of SpaceX approved NDT Technique Sheet with each shipment.