



Bid Change Order #2

Bid Number: 075-13

Amendment Date: September 19, 2018

Title: Noise & Operations Monitoring System (NOMS)

Contractor: Harris Corporation

This Change Order is effective as of 1 November 2018 (hereinafter "Execution Date"), between Harris Corporation, successor in interest to Exelis Inc. (hereinafter "Exelis"), having a place of business at 2235 Monroe Street, Herndon, Virginia 20171 (hereinafter "Harris"), and Snohomish County, having a place of business at 3220 100th Street SW, Everett, WA 98204.

WHEREAS, Exelis and Snohomish County entered into Contract No. 075-13 entitled Noise & Operations Monitoring System (NOMS) for services, of which the contract period of performance is 11/1/2013 – 10/31/18 (hereinafter "Agreement.")

WHEREAS, on November 10, 2015 Exelis and Snohomish County executed Change Order 001 to the Agreement and selected the contract option for a Flight Tracking Web-based Public Access Use Portal (Symphony PublicVue).

WHEREAS, Harris proposed to extend the Agreement for an additional five (5) years, remove the Flight Tracking Web-based Public Access Use Portal from the Agreement's scope, add the PlaneNoise Complaint Box integrated complaint management solution, and add an option for Snohomish County to add the integrated Symphony Contours with Virtual Noise Monitors (VNMs) module to the current NOMS at any time during the Agreement's term.

WHEREAS, Harris and Snohomish County agree that it is in both parties' interest to extend the Agreement for an additional five (5) years, remove the Flight Tracking Web-based Public Access Use Portal from the Agreement's scope, add the PlaneNoise Complaint Box integrated complaint management solution, and add an option for Snohomish County to add the integrated Symphony Contours with Virtual Noise Monitors (VNMs) module to the current NOMS at any time during the Agreement's term.

IN CONSIDERATION OF the promises and mutual covenants and agreement contained herein, the Parties agree as follows:

1. This Agreement is hereby extended for five (5) years. The new Agreement expiration date will be October 31, 2023.
2. Symphony PublicVue is removed as a deliverable under the Agreement's scope.
3. The PlaneNoise Complaint Box integrated complaint management solution is added as a deliverable under the Agreement's scope. See Attachment 1 for the PlaneNoise Complaint Box product description.
4. Snohomish County may add the Symphony Contours with VNMs module to the Agreement's scope for the remaining duration of the Agreement term at any time during the Agreement term by Snohomish County issuing a purchase order for the pro-rated current annual contract year price, executing a change order to the Agreement, or through another mutually agreeable method. See Attachment 2 for the Symphony Contours with VNMs product description.
5. Agreement pricing for the five (5) year extension period, as well as solution enhancements is outlined in Table 1 and optional solution enhancements outlined in Table 2 below.

Table 1 - NOMS Pricing:

V#54268

Description	Price (USD)
One-time PlaneNoise Complaint Box (PAE-One Airport Setup) System Set-up with Two-Way Interface with EnvironmentalVue for Complaint Data Sync (Due upon change order execution)	\$18,750 ✓
Up to 4 hours of web-based training on PlaneNoise	Complimentary
NOMS Extension Year 1 Including PlaneNoise	\$90,287 ✓
NOMS Extension Year 2 Including PlaneNoise	\$90,287 -
NOMS Extension Year 3 Including PlaneNoise	\$90,287 -
NOMS Extension Year 4 Including PlaneNoise	\$90,287 -
NOMS Extension Year 5 Including PlaneNoise	\$90,287 -
Five Year Extension Total	\$470,185

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Table 2 - Optional Solution Enhancements Pricing:

Description	Price (USD) ¹
One-time PlaneNoise Complaint Box Mobile Set-up Fee (Due upon selection of this option)	\$6,000 ²
One-time Symphony Contours with VNMs Setup Fee ³ (Due upon selection of this option)	\$7,500
Up to 4 hours of web-based training on Contours with VNMs	Complimentary
Annual Symphony Contours with VNMs Fee	\$15,000

1. Pricing is contingent upon Snohomish County maintaining the base NOMS services outlined in Table 1 above.
2. Pricing valid through October 31, 2019. If Snohomish County desires to add this optional solution enhancement at a later date, Harris will need to confirm and possibly adjust pricing, not to exceed annual CPI for each contract year.
3. The one-time set-up fee for Contours with VNMs is for the commercial off-the-shelf product. Since Contours with VNMs excludes operations with unknown aircraft types from calculations, if Snohomish County desires to work with Harris to customize the system to assign aircraft types to the operations with unknown aircraft types based on a custom set of rules, Harris will provide a separate quote for the additional set-up fee, which will include an hourly fee and scope.

Change Order 002 Attachment 1
PlaneNoise Complaint Box Product Description

PlaneNoise Complaint Box Product Overview

PlaneNoise Complaint Box will provide Snohomish County's Paine Field (PAE) Airport Operations Department with a standardized system to collect, analyze and resolve aircraft noise comments incorporating the following features:

- Automated Data Collection
- Dedicated Toll-Free or Local Noise Comment Line
- Comment Webform (stand-alone or embedded in Snohomish County/PAE's website)
- Auto-generated Comment Receipts
- Web Portal Access to Secure, Online Comment Database
- Complaint Box Dashboard
- Simplified Comment Tracking from Receipt to Resolution
- Noise Sensitive Area & Trend Identification
- Detailed GIS Maps & Reports
- Harris EnvironmentalVue Complaint Integration
- Responsive & Courteous Client Support

Complaint Box Mobile™ iOS- and Android-based mobile app is also offered as an optional solution enhancement for an additional fee.

Automated Data Collection

Commenters will be provided with up to three means to submit their comments or concerns: a noise comment hotline — PAE's existing noise comment phone line will be, if possible and desired, port forwarded or remote switched to the PlaneNoise phone system, an online webform and the optional mobile app, if selected. Callers into the system will be prompted to leave a detailed voicemail with their noise-related issues and concerns that will automatically generate a new comment record in Complaint Box with a date and time stamp and all associated commenter/contact information.

Additionally, comment records will contain the voicemail's audio file (.WAV) as well as a voice-to-text transcription allowing real-time review — no manual data entry is required. The hotline can also be configured where calls during certain specified time periods can be directed to a staff line for direct and personal handling.

Comment line voicemail calls will also feature advanced voice recognition technology that automatically searches for key words such as "low," "loud," "constant," etc., and categorizes the comments accordingly. In addition, designated airport staff can enter comments and directions/ comments to facilitate comment resolution and closeout. Voice recognition will also be used to identify threats and security concerns in a similar manner, in this case, automatically sending alert emails to designated airport management within minutes of receiving the questionable complaint or comment.

Additionally, commenters will be provided with an online Complaint Box webform featuring enhanced functionality. Above and beyond contact information (name, address, phone, email, etc.), complainants will be required to submit the noise event date and time, the comment and aircraft type(s) as well as provide an optional comment detailing their concern. Please note that Complaint Box webforms and the PlaneNoise mobile app include security features and multi-layered spam filters (internal and external) to minimize potential abuses. PlaneNoise webform and mobile app-generated comments are directly entered into Complaint Box and require no manual data entry.

All other terms and conditions of the Bid shall remain unchanged.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as the day and year set forth below:

"COUNTY"

Signature: 
Bramby Tollen, Purchasing Manager

Date: 9/20/18

"HARRIS CORPORATION"

Signature: Kathleen W. Taylor
Name: Kathleen Taylor
Title: Contracts Manager
Date: September 20, 2018

Digitally signed by Kathleen W. Taylor
DN: cn=Kathleen W. Taylor, o=Harris Corporation,
ou=Electronic Systems,
email=Kathleen.Taylor@harris.com, c=US
Date: 2018.09.20 10:38:49 -0400

Additionally, Complaint Box Noise Comment webforms and mobile apps now feature geolocation services where upon the commenter's approval, the form will automatically enter the location (address and geocode) from where the comment is being filed and request user entered data on whether they are "home." Additionally, regarding time and date data entry, the webform provides commenters with the option to enter the current time with one-click instead of using the pull-down menu choice lists. Both new features are designed to increase convenience and improve the overall comment submission experience.

Automated Complaint Confirmations

For each comment received by hotline or webform with a valid email address, Complaint Box automatically issues in real-time an HTML email receipt back to the commenter confirming that their concerns/issues have been logged into the system and will be reviewed, analyzed and mapped. The actual confirmation language will be crafted and approved by airport management. Complaint Box confirmation emails can also include a link back to the airport's noise information webpage to provide the commenter with additional information on the airport's noise abatement efforts.

Complaint Box Dashboard

The online, web-based Complaint Box Dashboard shows at a glance how many comments are being filed, where, when and by whom. Access will be determined solely by airport management based on specific need. When the system receives a comment, it automatically updates the charts and graphs in real-time.

Driving the charts and reports are the actual noise comment and complainant database tables. Additionally, the Dashboard's GIS map is dynamic, meaning that you zoom in and drill-down all the way to the roof-top level for each comment. Lastly, comment records are accessible via the Dashboard allowing designated staff to listen to each voicemail and/or read automated voice to text transcriptions and enter comments or follow up tasks, as needed.

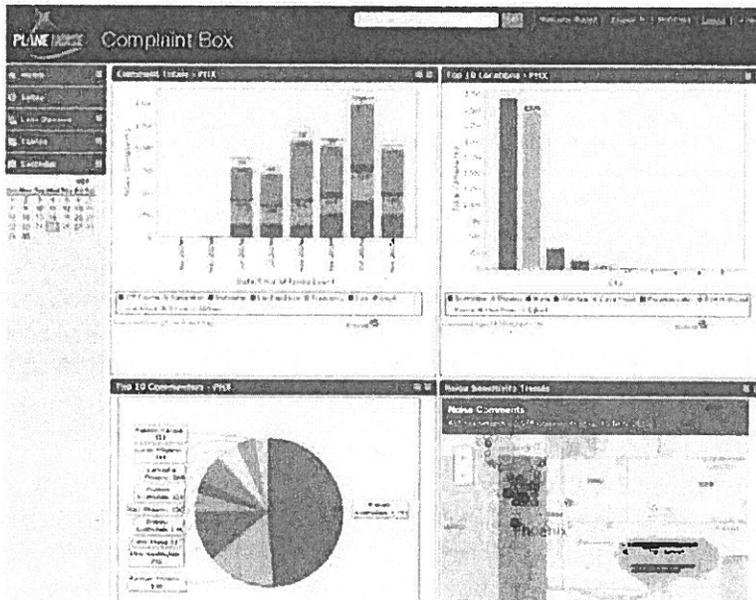


Figure 1: Complaint Box Dashboard

Commenter Responses

Complaint Box provides the airport with quick and easy ways to respond to commenters via email. The airport can create any number of template responses based on frequent issues and concerns and then send those emails directly from Complaint Box to the commenter. These templates can include any field data from a comment record through a built-in mail merge process. Responses can be sent to individual commenters or an entire filtered batch of the airport's choosing.

Complaint Box can also respond to noise comment trends using its powerful social media engine. For example, if a given community submits a predetermined number of comments within a specific time period or if a certain number of comments are received regarding jet aircraft operations, Complaint Box can issue template-based tweets either from the airport's Twitter account or PlaneNoise's. Just like with email templates, there can be an unlimited amount of Twitter templates.

Both response methods provide increased community engagement and further demonstrate Snohomish County's commitment to addressing aircraft noise concerns.

Noise Sensitivity Alerts

Similar to the Automatic Tweet function, based on a series of conditions, Complaint Box can issue emails to PAE's Airport Operations Department staff and management providing real-time information on community compatibility and noise sensitivity issues. For example, a high volume of comments from specified zip codes, cities, etc., would trigger automated emails such as: "Noise Sensitivity Alert: 60 noise comments from 10 households in zip code 98618 were received in the last hour." Increased real-time data management tools will allow the Noise Programs Office to stay informed of current noise issues.

GIS Mapping

Complaint Box Dashboard maps are always available online and are updated in real-time (daily households submitting comments) and/or on a regular basis, typically every two-weeks for the 90-day trend maps. The GIS maps feature proportional symbology that identifies each reporting household and adjusts the associated map marker's size and color intensity based on annoyance levels as defined by the number of comments filed. Additionally, the map may feature a zip code or neighborhood layer, which is also color coded based on the number of reporting households. When you click on a map marker, an info-window pops up displaying the detail for that household and when you click within a zip code or neighborhood boundary, another info-window pops up showing the total number of reporting households for that given zip.

The map graphic (Figure 2 below) demonstrates plotting noise sensitive areas at KPHX on a GIS map in Complaint Box. The Complaint Box system is fully integrated with the Harris EnvironmentalVue and PublicVue solutions for easy deployment and seamless use by PAE staff for effective community complaint management. For reference, the integrated Harris-PlaneNoise system in use today at KPHX has handled an average of 25,000 complaints per year after RNAV procedures were put into place.

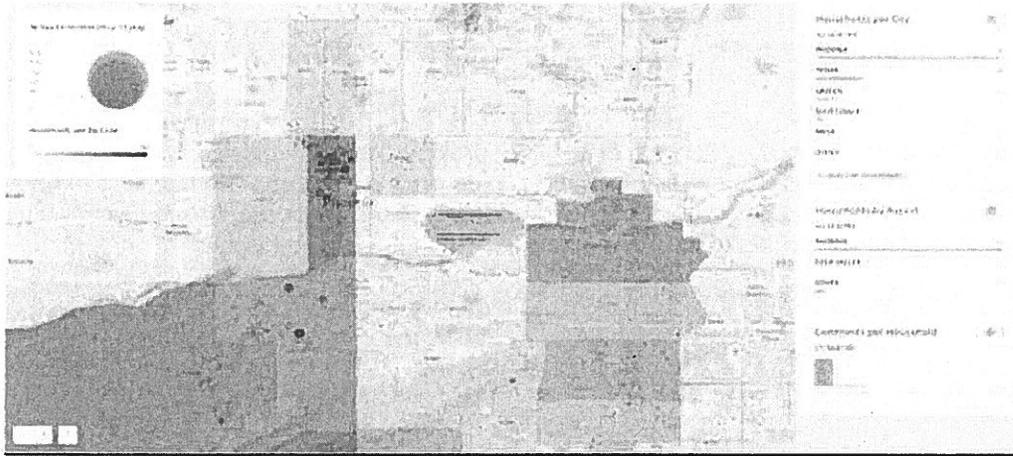


Figure 2: Map Plotting Noise Sensitive Areas

Reporting

The unique flexibility afforded by specific Complaint Box database tables allows for a variety of reports on any collected information. Complaint Box reports will assist management in further defining the extent of aircraft noise affects around PAE. These reports are generated online and can be run whenever needed.

Additional reporting features include auto-generated email reports (to an unlimited number of recipients) of any information contained within the Complaint Box databases. For example, an email graphically depicting how many comments were received the previous day broken down by location or aircraft type can be generated daily. An HTML report providing detail on each comment received (e.g., name, contact information, time of noise event, comment type, etc.) can also be attached to supplement the daily charts.

Regardless of medium (online or email) comment-based reports will be presented in tabular form and will include such data as total calls by location, number of distinct households, frequent callers, etc.

PlaneNoise & Harris Two-way Interface

Complaint data collected from the day the two systems are integrated and moving forward will be synced on a nightly basis so that complaint data is available in both the Symphony EnvironmentalVue and PlaneNoise systems.

Change Order 002 Attachment 2
Contours with Virtual Noise Monitors Product Description

Product Overview

Harris Symphony *Contours with Virtual Noise Monitors* will provide users the capability of calculating noise levels based on flight tracks at a certain chosen location on a GIS map. The Harris "*Contours with VNMs*" software module integrates with the *EnvironmentalVue* application and database to allow an airport to quickly and easily generate noise contours based on actual flight tracks. *Contours* module is based on the FAA Integrated Noise Model (INM) and is being upgraded to support the FAA Aviation Environmental Design Tool (AEDT). This module quickly and easily generates daily, weekly, monthly, quarterly or annual noise contours, including "what-if" scenarios. VNMs complement or replace fielded noise monitors. The *Contours* module can be easily set up to monitor any location in the vicinity of the airport.

Key advantages of *Contours with VNMs* include:

- *Contours/VNMs* powered by Harris NextGen *Data* results in high fidelity contours
- VNMs can be located in the vicinity of a noise complainant vs. fielding NMTs which may or may not be in the vicinity
- VNMs use aircraft-calculated noise metrics vs. NMTs which have ambient/community noise bias
- Airport can easily run contours resulting in lower cost to generate and produce annual or periodic contours
- *Contours/VNMs* can help validate RNAV departure procedures (RDPs) and other noise abatement departure procedures (NADPs)
- VNMs that are complemented by a portable noise monitor result in effective and targeted customer outreach when compared to existing NMT metrics and data

Available Virtual Noise Monitor Metrics:

- L-eq (A-weighted equivalent sound level)
- L-max (A-weighted maximum sound level)
- EPNL (Effective perceived noise level)
- SEL (Sound Energy Level)
- CNEL (Community Noise equivalent level)
- TALA65 (A-weighted noise level time above 65)

VNMs also exclude "noise contamination" from ambient or communication noise versus aircraft-only calculated noise metrics and reduce the total cost of ownership (TCO) when compared to field NMTs given the recurring costs for annual calibrations, maintenance contracts and recurring high speed Internet.

Contours with VNMs excludes operations with unknown aircraft type from *Contours* and VNMs calculations.