



CITY OF HOUSTON



HOUSTON AIRPORT SYSTEM

George Bush Intercontinental ~ William P. Hobby ~ Ellington Airport

Sylvester Turner
Mayor

Mario C. Diaz
Director of Aviation

February 6, 2023

SUBJECT: Letter of Clarification (LOC) No. 1

REFERENCE: Request For Proposals for Oculus LED Display System Provider for Houston Airport System (HAS); Solicitation No.: H37- OCULED-2023-13

To: All Prospective Respondents:

This Letter of Clarification (LOC) is issued for the following reason:

- I. **To EXTEND** the Solicitation Due Date from February 9, 2023, at 2:00 P.M., CDT **to Wednesday, February 22, 2023, at 2:00 P.M., CST.**
- II. **To Respond to questions submitted by prospective Respondents.**

1. **Question:** RFP Section 8.6.3.1.2: Please define "no perceptible pixels", specifically regarding how a product would be deemed to have perceptible pixels based on:
 - a. **An objective measure or specification.** (fill ratio, package design, etc.);
 - b. **A subjective analysis requiring a demonstration to approve or reject specific products.** (Given that LED manufacturers use different LED package designs and sizes to create specific fill ratios and reduce the appearance of granularity, control costs, and increase video performance.)

Response: The display technology shall enhance the creative content through "no perceptible pixels" during video playback, so as not to distract the viewer from experiencing the art. At this time, no objective measurement has been imposed. The perceptibility will be validated through mockups and will be subject to review and approval of HAS.

2. **Question:** RFP Section A.4.1.3: Please define "angle where the content remains recognizable". In our experience, the off-axis viewability has more to do with geometry and the actual content IP /aspect ratios than it does with video performance, whereas emissive display technology can be objectively measured based on brightness and color shift at specific off-axis viewing angles.

Response: Since the Oculus will be viewed from multiple levels and points of view, the viewing angle should be maximized to allow for the greatest viewing opportunities and enjoyment of the displayed content. The minimum values listed account for comprehension of the displayed content, not a measure of brightness.

Council Members: Amy Peck Tarsha Jackson Abbie Kamin Carolyn Evans-Shabazz Dave Martin Tiffany D. Thomas Mary Nan Huffman Karla Cisneros Robert Gallegos Edward Pollard Martha Castex-Tatum Mike Knox David W. Robinson Michael Kubosh Letitia Plummer Sallie Alcorn

Controller: Chris B. Brown

3. **Question:** RFP Section A.4.1.6: Please provide test criteria for contrast ratio measurement as no testing standard exists in the dvLED industry. At a minimum a specific lux measurement for establishment of black-level baseline will need to be standardized in order to compare products on an even scale.

Response: The LED manufacturer is required to provide equipment meeting the minimum values listed in the Specifications. HAS will review the test criteria and methods to determine suitability.

4. **Question:** RFP Section A.4.1.7: Is there a specific color space target? Will it suffice if all products offered provide “100% NTSC or better” as specified RFP Section A.5.1.11? Otherwise:

a. If specific color space is targeted, then what percentage of that color space will be deemed acceptable? (i.e. 90% of Rec2020, or 95% DCI-P3, etc.)

b. If no specific color space is required, then are there specific wavelengths (colors based on content IP requirements) that will have to be reproduced?

Response: Final content will be conceptualized with the chosen Content Production Company and has not yet been designed. Requirements for the LED Display Technology remain to provide 100% NTSC or better.

5. **Question:** RFP Section A.4.1.8: Please define “minimum” as dvLED displays can be set to produce zero light output.

Response: When displaying content, the LED Display technology should produce an acceptable brightness, with a minimum of 700 nits, to appear bright and readable within the space of the ICP, taking into account ambient lighting conditions.

6. **Question:** Idea of expected content – any general expectations of the style of content envisioned for this display would be a great reference. Can any renderings be provided?

Response: A rendering is included in Attachment A of the RFP. Final content will be conceptualized with the chosen Content Production Company and may include CGI, live action, generative or a combination of media.

7. **Question:** The RFP lists (8.6.3.1.2) the requested pixel pitch to be Indicate proposed pixel pitch suitable for a minimum viewing distance of 15ft with no perceptible pixels, then paragraph 8.6.7.3.1 The Proposer’s best base product price for LED tile product in 1.5mm and 2.5mm pixel pitch for the indicated size. Are you asking for a good, better, best pricing options? By most LED pitch calculations, the pitch recommended for a 15ft distance would fall between 1.5 and 2.5mm.

Response: The Proposer shall provide pricing for LED tile product within an acceptable range (1.5mm - 2.5mm) for a minimum viewing distance of 15 ft. The proposal pricing form shall indicate the quantity and pixel pitch for each LED tile product of the intended design.

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8. **Question:** Warranty & Maintenance Term – Attachment A - Specification, Section 18.1 indicates the submission is to “Provide standard warranty agreements [...] with a total of three (3) year parts and labor[...] options in one (1) year increments.” Attachment B - Cost Proposal, contains line items for Extended LED tile warranty, Extended LED Processor Warranty and Operations & Maintenance with an unspecified term quantity. Please clarify the expectations for what scope of Warranty & Maintenance coverage HAS is expecting to be covered under each line item in the Warranty & Maintenance table. I.e., should the pricing under Operations & Maintenance reference the three (3) year base warranty, and should the Extended LED warranty line items above reference warranty extensions beyond the three (3) year base?

Response: The minimum warranty of three (3) years for parts and labor shall be provided at no cost to HAS, as stated in RFP Attachment A 18.1. The pricing under Operations & Maintenance should cover any preventative maintenance costs and additional services provided under the proposed warranty and maintenance plans.

9. **Question:** Preventative Maintenance Visits – Attachment A - Specification, Section 26.2 – Preventative Maintenance Services provides details on the expectations on preventative maintenance. There does not appear to be a specific quantification of Preventative Maintenance visits per year under the three (3) year base. Please provide clarification as to the number of preventative maintenance inspections to be included per year.

Response: As stated in RFP Attachment A 26.2.2, a preventative maintenance plan shall be submitted to HAS for review and approval that details when services will be conducted. At this time, the Contractor shall propose the number of preventative maintenance inspections to be conducted that meets all the requirements outlined and the needs of the installed system.

10. **Question:** Scissor Lift for Maintenance – The availability of a scissor lift may have an impact on the ability to address maintenance and service issues within the Response Time Matrix indicated in section 26.3.1.2. Please confirm if HAS will keep a Scissor Lift on premises to be made available for Preventative Maintenance and Warranty events, or if the awarded AV Contractor should provide the scissor lift. Please confirm if there will be a location on premise to store a scissor lift during the maintenance and warranty term if necessary.

Response: Selected vendor to provide scissor lift for any maintenance work needed. HAS will not be able to provide equipment. Selected vendor will need to arrange storage at their own cost for the term of the contract if storage is needed.

11. **Question:** Airports commonly utilize Federal funding which require suppliers to meet the Buy America Act. Is the Buy American Act required? If not, will it be preferred for the LED Display System provided?

Response: This procurement does not fall under the Buy America Act.

12. **Question:** RFP Section 9:

- (a) What is the total tolerance of the finished wall construction from final plan to as-built (studs/plywood/drywall)? +/- ? (This will affect the total depth of solution.)
(b) Will the staggered plywood layers be structurally rated to hold the distribution of the display panel weights?
(c) Or what is expected from a load path requirement. Is the intent to mount direct to the plywood?

Response: (a) The planned dimensions of the Oculus wall (from the face of the stud framing) is (7/8" furring + 1/2" plywood + 5/8" drywall = 2 inches). A 1/4" total tolerance would be reasonable, but should be confirmed with ITRP contractors.

- (b) The plywood should not be expected to be rated to support the weight of the display panels.
(c) The panels should be fastened directly to the metal studs behind the plywood.

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13. Question: RFP Section 11:

What is a proposed timeframe for having the mock up completed? Would it be acceptable to do mockup at manufacturers site within the US.

Response: Mockups shall be constructed at a HAS approved facility in the Houston area and will be subject to review and approval by HAS and/or the OAR. Mockups shall be based on final approved shop drawings and be presented before installation in the ICP.

14. Question: RFP Attachment B:

Attachment B Table 1 item 1 asks for the cost of Display Technology (Tiles, Processors, Cabling, Cabinets, etc.). Table 2 asks for 8 various options with various pixel pitches with modules/tiles only and calls for cabinets, power supplies and data distribution to be broken out with one cost to apply to all 8 pixel pitch options.

- The items listed under "other display technology" will change in cost with various changes in pixel pitch or design. (tighter pitches might require more processing and higher power loads)
- This is not easily broken out and approach to breaking it out can vary greatly from one supplier to another. We request that LED modules, power, data and cabinets be one combined line item.
- We intend to provide finished UL certified LED panels complete with finish cabinets, pre-installed/ pre harnessed data and power systems and modules.

Can the 8 options be listed the same as in Table 1?

Response: Include the pricing for the "other display technology" for the anticipated design, the number of required LED tiles and shapes. The overall cost for Display Technology will be reviewed with the proposal response narrative.

15. Question: RFP Attachment B:

Can brightness be added to the pricing matrix along with pixel pitch? High brightness has multiple benefits from product longevity to image quality and contrast.

Response: Brightness is not included in the pricing matrix. Brightness should be indicated in Attachment E Specifications Response Form. Any benefits to the chosen product should be described in the narrative.

16. Question: RFP Section 21.7.1 and 22.1:

- (a) You request a 3 year parts and ongoing warranty extensions in 1 year increments. Would you like the 1 year increments out to 10 years?
- (b) Regarding spare parts; Would you like each bidder to provide and document the quantity of spare parts the manufacturer recommends for a manufacturer provided 10 year parts service agreement?

Response: Provide extended warranty for at least five (5) years.

17. Question: RFP Section 6.1:

RFP states a current planned opening / substantial completion of LED system for May 2024, can you provide further installation sequencing for project.

Response: Not at this time. This will be coordinated with the ITRP Project/contractors.

18. Question: What is the timeline for ITRP to finish secondary structure?

Response: Unable to answer at this time. This will be coordinated with the ITRP project/contractors.

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19. **Question:** When will the installation of video display be able to start?

Response: Unable to answer at this time. This will be coordinated with the ITRP project/contractors.

20. **Question:** Are there any restrictions on day's or time of day we are allowed or denied access to the facility? Leading up to May 2024 during construction? After opening of the facility what are the time of day restrictions for accessing display for maintenance?

Response: After opening, available times are during non-flight activity. Typically, between midnight and 5:00 am. But these times need to be coordinated prior to any maintenance activity. Prior to opening, there could be restrictions, these will need to be coordinated with ITRP project/contractors.

21. **Question:** Please clarify the M/WBE requirements for the project.

Response: There is no obligation to subcontract to a MWBE registered firm, as stated in RFP Section 9.2, "This RFP is exempt from providing MWBE participation".

22. **Question:** Please provide a model of the oculus design intent in cad or other similar modeling software format.

Response: Drawings of the Oculus shape and renderings have been provided in the RFP documents. It is presumed that the winning proposer will be provided access to the model on BIM360 to further develop the display design. This access will not be provided during the procurement process.

23. **Question:** Is there a list of subcontractors pre-approved to work on site?

Response: Not at this time. It is expected for the selected vendor to provide a list of sub-contractors.

24. **Question:** Section 8.6.3.1.2 states "Indicate proposed pixel pitch suitable for a minimum viewing distance of 15ft with no perceptible pixels on a curvilinear display of concave configurations." Since visual perceptibility differs from individual to individual, is there a standardized basis that will be used to determine whether or not the pixels will be perceptible?

Response: The display technology shall enhance the creative content through "no perceptible pixels" during video playback, so as not to distract the viewer from experiencing the art. At this time, no objective measurement has been imposed. The perceptibility will be validated through mockups and will be subject to review and approval of HAS.

25. **Question:** Is it possible to get the dwg drawing files for the environment that the Oculus wall will be installed in?

Response: Please refer to the response provided for Question #22.

26. **Question:** What is the content goal for this project? Landscape/cityscape, nature/scenic, informational or a combination? Any further clarification of desired content and use case for the display will help ensure we are engineering the best solution for the desired functionality.

Response: Final content will be conceptualized with the chosen Content Production Company and may include CGI, live action, generative or a combination of media.

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27. **Question:** Can the mockup take place outside of the Houston area? If not, will IAH be providing space to house the mockups?

Response: Please refer to response provided in Question #13 above.

28. **Question:** Will bidding on the LED wall portion of the project preclude us from bidding on the CMS portion of the project?

Response: Submitting a response to this RFP does not prohibit the Proposer from submitting a response to other HAS solicitations. Contract requires that LED Display Provider work with the chosen CMS Contractor as part of an additional solicitation.

29. **Question:** We understand the invoicing process but how will payments be assigned, monthly based on achieved progress, completion of milestones or ...?

Response: Intent is for invoices to be paid based on completed milestones. HAS may consider other options with selected vendor.

30. **Question:** What will the ambient lighting within the Terminal consist of?

Response: Coordination with ITRP shall take place upon contract award to determine exact measurements of ambient lighting. Proposers should anticipate a typical airport terminal facility with varying ambient light sources.

31. **Question:** Will there be direct sunlight reaching the oculus area?

Response: Because of the downward-facing shape of the Oculus, we don't anticipate any sunlight hitting the Oculus directly. However, the ICP building plan includes skylights that will admit light that will vary with the natural environment.

When issued, LOC(s) shall automatically become part of the solicitation documents and shall supersede any previous specification(s) and/or provision(s) in conflict with these LOC(s). LOC(s) will be incorporated into the Contract as applicable. It is the responsibility of the respondent(s) to ensure that it has obtained all such LOC(s). By submitting a proposal on this project, respondent(s) shall be deemed to have received all LOC(s) and to have incorporated them into their proposal.

If further clarification is needed regarding this solicitation, please contact André Morrow, C.P.M., CPPB, Sr. Procurement Specialist, via email at andre.morrow@houstontx.gov.

DocuSigned by:



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Cathy Vander Plaats
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