



Khronos Group

Request for Proposals

Godot Integration

18 April 2024

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Request for Proposals: Godot Integration

1. Background

OpenXR™ is a runtime standard with many of its documentation, resources, tutorials, and examples geared towards runtime developers. However this creates a gap in the industry as most application developers do not interact directly with OpenXR but instead use a library or game engine. By funding the Godot Integration Project, OpenXR and Godot, an open source game engine, can work together to:

1. Create a testbed for the OpenXR API by enabling a direct feedback channel between app developers and runtime developers. A byproduct of this is building the OpenXR Advisory Panel with app developers to ensure successful OpenXR Conferences with the Outreach Subgroup.
2. Improve developer documentation including examples with WG notes on best practices. Although the OpenXR Tutorial Project covers using OpenXR directly, most app developers will use a library/engine therefore providing examples at the engine level is still needed.
3. Provide a OpenXR Working Group (OWG) approved open-source reference for other game engines and libraries to reduce fragmentation in the industry. Since Godot is MIT-licensed, the work done in this project can be freely integrated into proprietary projects, advancing the entire industry.

OWG wishes to expand and demonstrate the reach of the API Standard by better integrating OpenXR with the [Godot game engine](#)² to effectively bridge the gap between runtime developers and application developers.

2. Summary (Informative)

The section summarizes this RFP. It does not supersede any other section in the document.

| | |
|----------------------------|---------------------------------------|
| Contract Type | Time & Materials |
| Contract Amount | Not to exceed \$100,000 US dollars |
| Contract Duration | Anticipate 12 months |
| Proposals Due | 22 May 2024 at 5:00pm PDT (GMT-0700) |
| Bids good until | 24 June 2024 |
| Bidder notification | Anticipate no later than 14 June 2024 |
| Anticipated contract start | 17 June 2024 |

3. Methodology

Khronos has a fixed budget for this project with payments made monthly after approval of OWG.

This RFP is being circulated to all Khronos members and the general public. Anyone with experience in Godot and OpenXR is welcome to submit a proposal for consideration.

- Contractor selection is described in [§8. Selection Process](#).
- The contracting process is described in [§9. Contracting Agreement](#).
- Any follow-on work is described in [§10. Project Continuation](#).

4. Scope

Project funds **shall only** be used for the following items (see [§5. Deliverables](#) for details):

1. **XR Specific Development in the Godot Engine** - In general, work that involves XR development in the Godot Engine can be billed. At any time during the project, the contractor may propose additional work or higher priority work that can be billed using project funds with approval from the OpenXR Working Group.
2. **OpenXR Reviews and Feedback** - Providing feedback and reviewing OpenXR merge requests and issues can be billed if that particular item is related to improving the integration between Godot and OpenXR.
3. **Project Meetings** - Contractor may only bill for the regularly scheduled “OpenXR / Godot Integration Project” meetings. All other Working Group meetings including F2F events are not billable unless explicitly authorized by OWG.

Project funds **shall not** be used for any of the following items

1. **OpenXR Specification Creation** - Contractor can provide feedback, suggestions, and clarification and style edits on existing or proposed OpenXR specification text including editing language, voice, format, and style, but **CANNOT** propose new specified functionality that becomes part of the OpenXR specification using the project funds.
2. **Non-Project Meetings** - All Working Group or Khronos meetings including F2F events are not billable with the following exceptions
 - 2.1. Regularly scheduled “OpenXR / Godot Integration Project” meetings
 - 2.2. Meetings or events explicitly authorized by OWG prior to the meeting or event

Attendance by at least one representative from the Godot Integration contractor at the “OpenXR / Godot Integration Project” meetings is required to provide the Working Group members with updates on the status of the project. The time and cadence of such meetings will be jointly determined by OWG and the Contractor.

5. Deliverables

The contractor shall deliver to OWG a short weekly status and monthly progress report. The contractor will use existing email list(s) for communicating to OWG or other means as determined by the OWG Chair. The contractor will work under technical direction of the OWG technical project lead as directed by the Chair of OWG.

This work has a certain amount of flexibility depending on KHR/EXT extensions being added to the OpenXR spec for which there is an interest in (early) adoption with Godot. The detailed list below is a starting point of what should be included, priority of the items listed may change over time.

- 5.1. Managing and overhead in relationship to OpenXR features
 - 5.1.1. Pull/Merge Requests reviews on Godot repositories for features implemented by other team members/contributors
 - 5.1.2. Weekly status report (as either email or short presentation) to OWG
 - 5.1.3. "OpenXR / Godot Integration Project" Team meetings held every other week with a typical duration of about 1 hour.
 - 5.1.4. Final report as a presentation to OWG delivered at the end of the project
 - 5.1.5. Draft text and images for a Khronos blog post highlighting the accomplishments and features of the work
- 5.2. Implementing OpenXR APIs (with a focus on core/KHR/EXT extensions)
 - 5.2.1. Adding support for DirectX backend (pending multiview additions)
 - 5.2.2. Adding support for Metal backend (pending merging of Metal support)
 - 5.2.3. Adding support for XR_KHR_binding_modification to action map implementation
 - 5.2.4. Adding support for XR_EXT_debug_utils
 - 5.2.5. Adding support for EXT render models extensions
 - 5.2.6. Adding support for EXT body tracking (once defined)
 - 5.2.7. Adding support for EXT face tracking (once defined)
 - 5.2.8. Future EXTs that are on the radar (scene discovery, markers, etc)
- 5.3. Improvements to Godot Core related to OpenXR support
 - 5.3.1. Add multiview support to DirectX and Metal backends
 - 5.3.2. Investigate and if possible add VRS support to DirectX and/or Metal backends
 - 5.3.3. Improvements to Godot Action Map system, possibly integrating Runes work.
 - 5.3.4. Investigate feasibility of using Khronos Android loader in core.
- 5.4. Improvements to Godot XR Tools related to OpenXR support
 - 5.4.1. Rework locomotion support
 - 5.4.2. Improve hand - physics interactions
 - 5.4.3. Add implementation for body/face tracking
- 5.5. Writing/Completing documentation and examples around these implementations

6. Schedule and Budget

Khronos is funding this work at a total price not to exceed \$100,000 for 12 months. If necessary, OWG will evaluate if additional work is required and create a new contract. Khronos will assume that the spending profile is approximately \$8300 per month. Bidders may propose other spending (and work) profiles that are not uniform in their proposal.

Payments shall be made monthly provided the invoice for the preceding month is submitted by the 5th of the month.

Due to the nature of the work, the project type is expected to be Time and Materials.

7. Requirements (Normative)

The Requirements for this project are listed in the deliverables. Ownership and licensing requirements are listed below.

7.1. Ownership & Licensing

7.1.1. All material submitted to Godot project shall follow the rules, procedures, and licensing required by Godot.

7.1.1.1. Software as [MIT license](#)³.

7.1.1.2. Content or documentation as [Creative Commons BY Attribution](#)⁴.

7.1.2. Ownership of all new work done under this contract shall solely be Khronos.

7.1.3. Ownership of modified software shall be joint with Khronos being one of the owners.

8. Selection Process

Khronos shall designate a Khronos RFP Manager and will use an RFP email list (oxr-godot-rfp@lists.khronos.org) that can be used to contact the RFP Manager and all other Khronos members involved in the bid selection process. No member making a bid shall be on the RFP list. Any organization considering making a bid in response to the RFP should notify the RFP list as soon as possible. Any potential bidder may request additional information and submit questions directly to the RFP manager or on the RFP email list. Any additional Khronos information and RFP clarifications will be distributed equally to all potential bidders.

All bidders should provide the following information in the format of their choice:

- Proposed schedule, assuming work starts on **3 June 2024**

- Confirmation that if your bid is accepted, you are willing to work under the terms of the Khronos Contractor Agreement^[1].
- Any issues or risk factors that they wish to highlight.
- Supporting materials, including background materials about their company, highlighting experience and expertise relevant to this project.

RFP responses are requested by **5:00pm PDT (GMT-0700) on 22 May 2024** and should be sent to the RFP list. Bidders may update their bid as they wish before the submission deadline. In exceptional circumstances a requested submission deadline extension may be issued to all bidders at Khronos' discretion. All bids must be good until **24 June 2024**.

Khronos will evaluate all bids and select the bid based on stated and relevant expertise, including experience with Godot game engine; innovative ideas; budget; schedule; and previous Khronos experience.

Khronos expects to announce the selected bid within four (4) weeks after the submission deadline and will immediately notify all bidders and enter into contract negotiations with the selected bidder to finalize deliverables and payment schedule. Khronos will immediately notify all other bidders once contract negotiations are complete. In the case contractual agreement cannot be reached, Khronos may select an alternative bidder and re-enter negotiations.

Work can start immediately when the contract is negotiated and executed by both parties.

9. Contractor's Agreement

The selected contractor will be required to execute the Khronos Contractors Agreement¹ with Milestones and Costs entered into Exhibit B and Contractor Disclosures entered into Exhibit C.

No work shall begin, and Khronos shall be liable for no costs or expenses, until the selected contractor is in receipt of a mutually executed Contractor's Agreement.

It is important that contractors understand that, under the terms of the Contractors Agreement, Khronos will assess progress on a regular basis and reserves the right to terminate or renegotiate the contract in the event of insufficient progress or other issues.

10. Project Continuation

Khronos might consider possible extensions and follow-ons to this project. Successful completion of this project by the contractor enables bidding or assignment on any future follow-on work.

11. References

[1] Khronos Contractors Agreement - <https://members.khronos.org/document/dl/30507>

[2] Godot game engine - <https://godotengine.org/>

[3] MIT software license - <https://opensource.org/license/mit>

[4] Creative Commons By Attribution 4.0 legal code - <https://creativecommons.org/licenses/by/4.0/legalcode.en>