Adaptive lookahead planning for performing music composition
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Adaptive lookahead planning for performing music composition

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Context

- Creating music amounts to write (compose) and perform (live)
- Composition can last an indefinite time
- Performance has a timeline defined during composition

Adaptive lookahead (dynamic vs. static)

<table>
<thead>
<tr>
<th>Dynamic object</th>
<th>Static object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likely to be modified while being rendered</td>
<td>Will never change</td>
</tr>
</tbody>
</table>

Compositional processes that generate or modify musical structures can be integrated in musical objects, and occur during the performance

Planning of a musical object

- Computer-music environment: react to user inputs
- Process tasks: non preemptible, best-effort
- Integrate results in the data structure
- Notify the planner about editions

Dynamic lookahead extension

Plan « just in time » in a time-window

Possibility to extend this time-window

Data structure

- Object to plan
- Translation
- Edits

Scheduler

- Synchronously render plans
- Query the planner for new plans after depletion
- Trigger compositional processes as « tasks »
- Time updates (graphics, callbacks etc.)

Example

Download OpenMusic: http://repmus.ircam.fr/openmusic/