



HAL
open science

Adaptive lookahead planning for performing music composition

Dimitri Bouche, Jean Bresson

► **To cite this version:**

Dimitri Bouche, Jean Bresson. Adaptive lookahead planning for performing music composition. The 25th International Conference on Automated Planning and Scheduling (ICAPS), Jun 2015, Jerusalem, Israel. 2015. hal-01163294

HAL Id: hal-01163294

<https://hal.science/hal-01163294>

Submitted on 12 Jun 2015

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Adaptive lookahead planning for performing music composition

Dimitri Bouche – Jean Bresson
 UMR 9912 STMS IRCAM-CNRS-UPMC / Paris, France
 {bouche,bresson}@ircam.fr

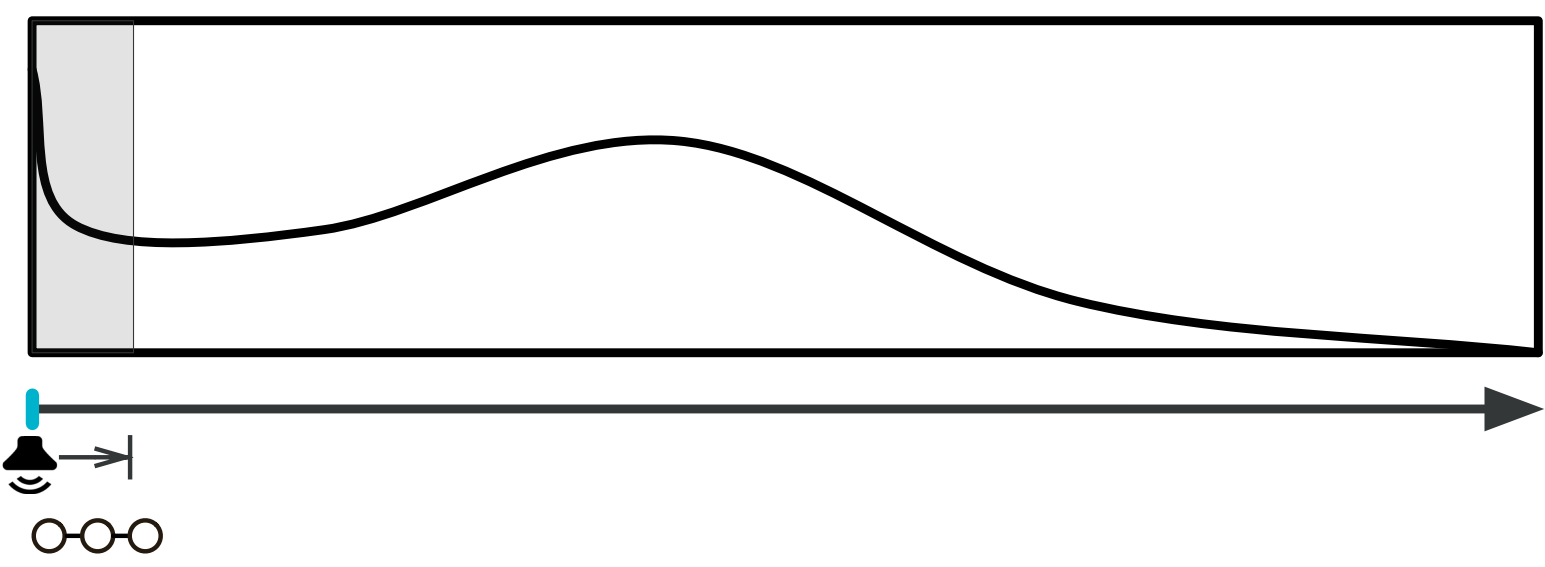
Context

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

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

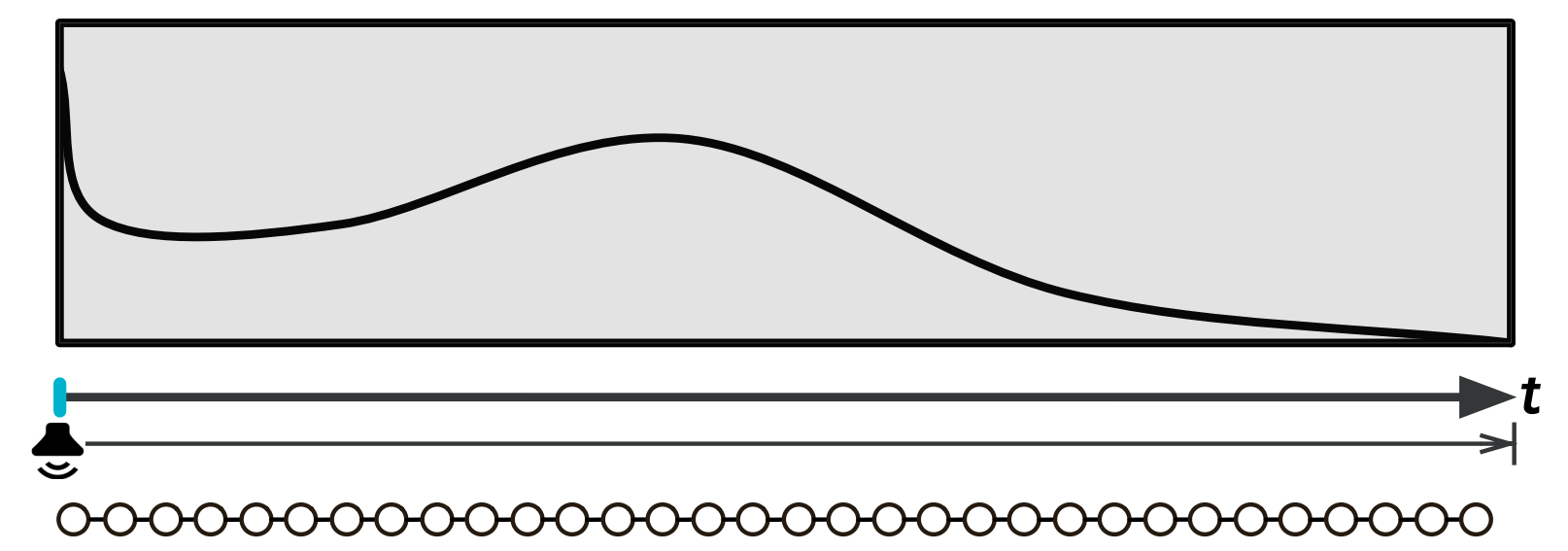
Adaptive lookahead (dynamic vs. static)

Dynamic object



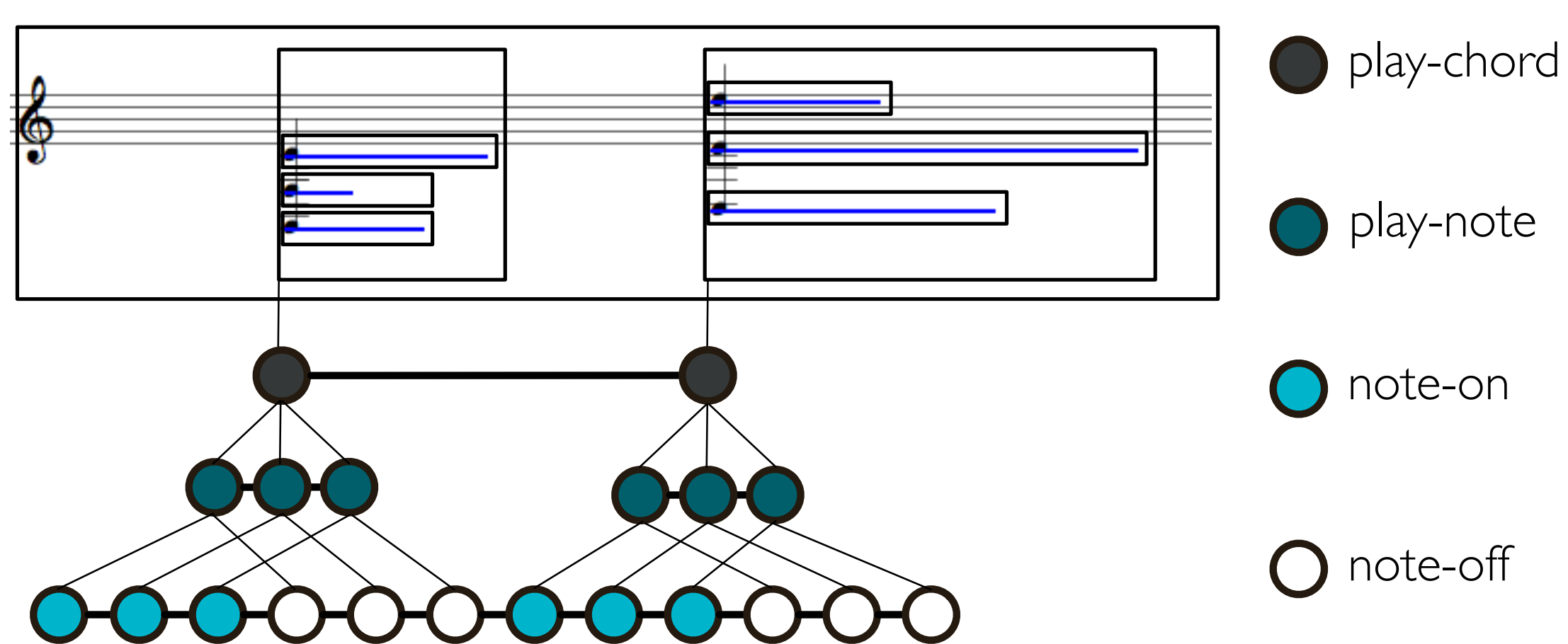
likely to be modified while being rendered

Static object



will never change

Planning of a musical object



Dynamic lookahead extension

Plan « just in time » in a time-window



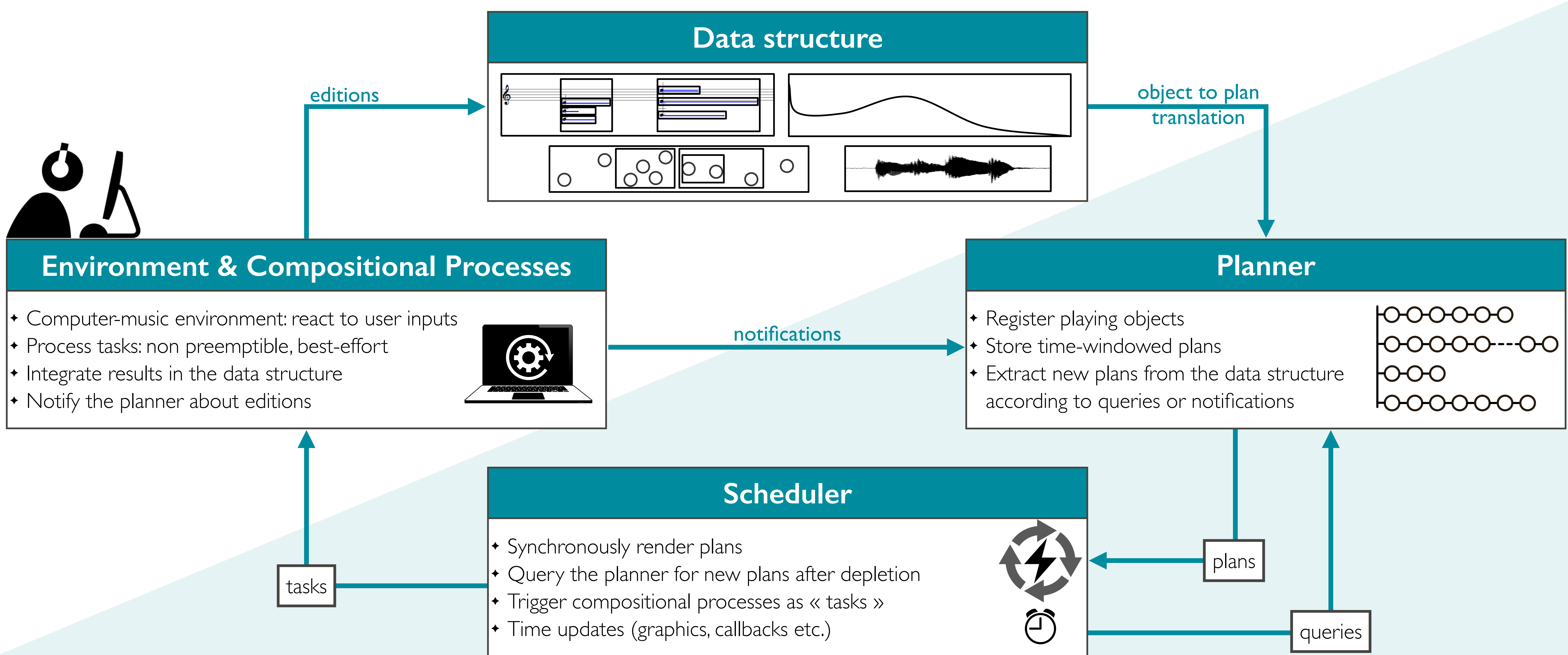
short anticipation

Possibility to extend this time-window

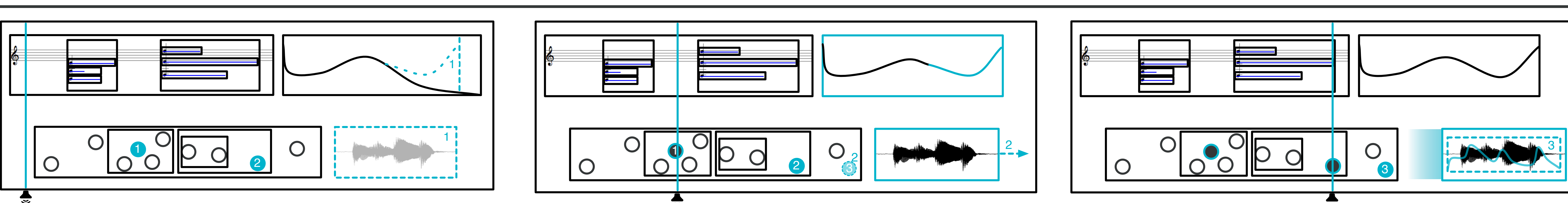


larger anticipation

Planning and scheduling operation scheme



Example



1 2 3 : Tasks triggering compositional processes

1 2 3 : Results of compositional processes