# Spatialisateur

# Ircam / Espaces Nouveaux

# Release Notes

# Contents

# 1   Overview

Version 4.x of **Spat**$\sim$ reached another milestone in software development (the code was completely rewritten) providing a flexible program architecture and effective user interfaces.

The main functions and the characteristics of the version 4.x are :

- a large number of objects can be modulated and scaled (up to 64 inputs/outputs)

- intuitive control interfaces facilitate the configuration of loudspeaker setups and the manipulation of the sound sources

- IrcamVerb: a new multichannel reverb (Stereo, 5.1, etc.) with the usual control interface

- a large family of panning techniques (quadrophony, 5.0, octophony, simulation of XY, MS or AB recordings, VBAP 2D or 3D, DBAP, Ambisonic B-format and higher orders, 3D binaural with compensation of near field effects, Surround 4.x, 5.x and higher, etc.)

- improvement of the reverb quality (reverb tail is less "metallic")

- complete documentation of the externals and patches

- takes full advantage of the new features of Max/MSP® 5 (attributes, management of the presets with pattr)

- modules for coding/decoding that manage different formats (ambisonic, transaural, surround, UHJ, etc.)

- a better coherence in the architecture and the management of messages

- low CPU consumption

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# 2 System Requirements

**Spat**∼ 4 requires Max/MSP[®] version 5.0.0 or higher. **Spat**∼ 4 is compatible with both Mac OS X (Universal Binary) and Windows XP/Vista.

| Minimum configuration | Recommended configuration |
|---|---|
| Cycling'74 Max/MSP 5.0.0 | Cycling'74 Max/MSP 5.1.4 |
| Mac PPC or Mac Intel machine running Mac OS X 10.4 | Mac Intel machine running Mac OS X 10.6 |
| Microsoft Windows XP or Vista | Microsoft Windows XP |

**Spat**∼ 4 will run without problems if you already have **Spat**∼ 3.x already installed on your computer.

# 3 Installation

## 3.1 Automatic installation

**Spat**∼ provides an automatic installer : All Spat components are installed into the Max folder (by default : /Applications/Max5/Cycling '74/ircam-spat ).

Warning : During the automatic install, files inside /Applications/Max5/Cycling '74/ircam-spat folder might be deleted. You should not store your personal patches inside this folder.

## 3.2 Manual installation

You can also proceed a manual installation by unzipping the "noinstaller" version of **Spat**∼ and copying files wherever you want. Then add **Spat**∼ folder (and subfolders) to your Max/MSP[®] search path.

# 4 Package content

The Ircam Spat folder contains the following subfolders:

- abstractions/ : patches for Mac OS X and Windows. Most of them are designed to be used as bpatchers

- doc/ : documentation and release notes

- externals/ : external objects

- help/ : help patches

- ref/ : reference documentation used in help patches

- resources/ : filters database (hrtf used for binaural and transaural applications), presets and other resource files

- tutorials/ : a brief tutorial to highlight the funcitonality of **Spat**∼ for first-time users (and others)

# 5  Getting Started

Launch the "Ircam Spat Overview" patcher to have a quick look of the available externals, help files, and tutorials. Look at the help patchers and walk through the tutorials.

# 6  Licence & Credits

Spatialisateur is an IRCAM registered trademarks.

The design of **Spat**~ and the reverberation module are protected under different French and international patents ([FR] 92 02528; [US] 5,491,754, [FR] 95 10111; [US] 5,812,674).

All other trademarks belong to their owners.Max/MSP® is the property of IRCAM and Cycling'74.

This manual can not be copied, in whole or part, without the written consent of Ircam.

This manual originally was written by Jean-Marc Jot, and was produced under the editorial responsibility of Marc Battier.

Design of digital signal processing algorithms and implementation in Max: Jean-Marc Jot (Espaces Nouveaux / Ircam).

Objective and perceptual characterization of room acoustical quality: Jean-Pascal Jullien, Olivier Warusfel, Eckard Kahle.

Additional contributions by Gerard Assayag, Georges Bloch, and Martine Marin.
Thanks to Xavier Chabot, Eric Daubresse, Gerhard Eckel, Serge Lemouton, Laurent Pottier, Leslie Stuck, and Zack Settel for instructive discussions and advice.

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Updated October 2006 by Terence Caulkins.
Updated November 16, 2010 by Thibaut Carpentier.


This document is a reference manual for version 4.x of **Spat**~ , which runs on Max/MSP® version 5.x.

**Spat**~ Version 4.x design and implementation was ensured by Thibaut Carpentier and Rémy Muller.

# 7 Contacts

The use of this software and its documentation is restricted to members of the Ircam software users group.

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For software updates and additional information:

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