

INTEL[®] MISSION CONTROL SOFTWARE INTEL DRONE GROUP

Release Notes

July 1, 2019

VERSION HISTORY/REVISION HISTORY

These are the main software releases that have been made available:

Date	Revision	Description
May 16, 2018	Intel Mission Control v1.0.1	Public beta release available on request
July 16, 2018	Intel Mission Control v1.1.2	Public beta release available on request
November 08, 2018	Intel Mission Control v1.2.7	Public beta release available on request
January 18, 2019	Intel Mission Control v1.4.5	Public beta release available on request
April 5, 2019	Intel Mission Control v.1.6.0	IMC public release

July 1, 2019	Intel Mission Control v.1.6.1	Calibration for Intel® High Resolution Imaging Payload
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INTENDED AUDIENCE

This release of Intel® Mission Control Software is intended for all users of Intel® Falcon™ 8+ UAS with an enabled Survey Package (Survey package is enabled by default with Firmware 1.7 bundle).

CUSTOMER SUPPORT

Support requests for Intel® Mission Control Software can be filed using the “Contact support” form within the application (accessed via Help menu or with the keyboard shortcut **F12**).

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1. INTRODUCTION

This document provides information about the release of Intel® Mission Control Software (IMC) v1.6.1.

To learn more about this product, see:

- Features listed in the [About this Release](#) section below, or in the help.
- Reference documentation is listed in the [Related Documentation](#) section below.

2. ABOUT THIS RELEASE

2.1 FEATURES

IMC is a software solution to plan and export flight plans. It is designed to support flights for:

- **Survey Usage**, for example: buildings, city planning, constructions, mining
- **Inspection Usage**, for example: cell towers, bridges, power lines, pipelines, railways

The application leads you through the steps to plan your flight and to preview and export flight data. You can set up your project in advance, before going out to the field. Intel® Mission Control Software is intended to support the following Unmanned Aerial Vehicles (UAV): Intel® Falcon™ 8+ UAS.

3. FEATURES

Intel® Mission Control Software offers different choices for flight plans, covering:

Areas:

- **Polygon:** Flight planning of diverse polygonal areas. For surveying, utilities, and construction management
- **Corridor:** Flight planning of long areas, for construction, inspection, surveying. For power line or pipeline inspection, rail tracks or roads
- **City Grid:** Flight planning with perpendicular flight paths, optimizing data capture for vertical structures. For surveying, inspection, and preservation
- **Square Spiral:** The pattern is flown from the center, with subsequent square type spirals as the flight progresses.

Structures:

- **Tower:** Flight planning of cylindrical forms, for construction, utilities, oil and gas
- **Building:** For flight planning of cuboid objects, for inspection and surveying, constructions and buildings
- **Façade:** For flight planning of vertical sections of complex structures e.g. for facades of buildings or retaining walls, for construction and utilities
- **COI:** For flight planning of cylindrical sections, for construction, utilities, oil and gas
- **Panorama:** Create a panorama around one spot

Control and edit basic and advanced project parameters, including:

- Image overlap
- Flight direction
- Resolution (ground sample distance)
- Scan patterns
- Additional camera pitch angles
- Camera variance

Set further parameters specific to structures flight plans:

- Min/max. capture height of object
- Scanning of top surface
- Minimum altitude above reference point
- Max yaw change
- Flight rotation
- Min/max distance to object

- **Take-off position** customizable
- **Create 3D objects** and manually enter GPS coordinates for an Area of Interest (AOI) corners, to support precise geo-referencing of AOI
- **Automatic terrain adaption** designed to support a constant altitude above ground level for an optimum ground sample distance (GSD)
- **Individual waypoint editing or Mass-editing of manual waypoints.**
- **Altitude reference point.** The entire flight plan is not produced relative to the take-off position, but to the **altitude reference point**. The reference point will set the altitude reference as a base for all flight plan related items such as structures.

Safety

- **Optional safety waypoints.** If an obstacle is present between take-off and the first waypoint, it is an option that a safety waypoint is added.
- **Automatic pre-flight checks including:** Estimated battery life, display of airspace integration, maximum dive/climb rate, minimum/maximum altitude, target photo coverage quality, ground & object safety limits, ground sample distance check, estimated number of images, camera speed, line-of-sight.

Full 3D globe with several map layers:

- Map data including elevation
- Airspace data layers
- KML & SHP file import
- GeoTiff import (Elevation data as DEM/DSM as well as Orthophoto import)
- WMS import & integrated WMS Sentinel map layers
- Measurement tool & compass
- Additional lines & grid layers (Contour lines, height profile, UTM grid)
- Terrain can be deactivated, terrain data source selectable
- Search bar

Payload support

- Hardware presets for :
 - Inspection Payload
 - Sony Alpha 7R
 - Sony A6000
 - Sony Rx1RII

Dataset

- Easy creation of datasets from log files & images
- Filter by area/parameters

- 2D / 3D preview for images
- Several export options
- Overview data coverage statistics and inspect individual images

BUG FIXES & IMPROVEMENTS IN INTEL® MISSION CONTROL SOFTWARE 1.6.1:

- **Improved calibration for the Intel® High Resolution Imaging payload.**
- Renamed field from “**Altitude**” to “**Distance**” in area flight plans to avoid confusion and preserve consistency with structure flight plans.
- Renamed field from “**Fly straight lines**” to “**Ignore terrain surface**”.
- Fixed a bug where a corridor flight plan was not correctly calculated if all vertex points of the corridor flight plan were on a straight line.
- Fixed a bug where sometimes the values for “**Altitude**” in the waypoint editing dialogue have been displayed in “**Centimeter**” instead of “**Meter**”.
- Fixed a bug where the automatically fixed speed has been incorrectly visualized after closing and reopening a flight plan.

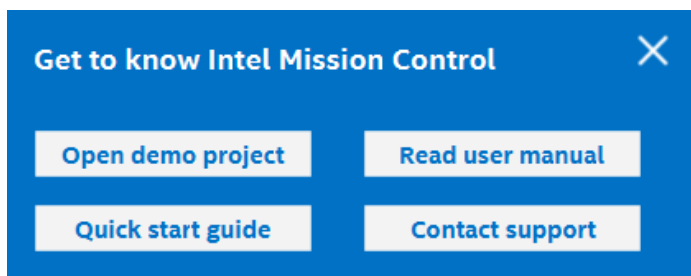
4. KNOWN ISSUES

In rare cases airspaces are not loaded/displayed correctly. Please make sure that you have all necessary permissions to conduct a flight safely.

In the rare case elevation is displayed with initial elevation points only, appearing in blocks. Import a known elevation model, please.

5. RELATED DOCUMENTATION

The IMC User Manual as well as a Quick Start Guide can be accessed from the application's **Welcome Screen** (bottom right of the user interface). The IMC User Manual can also be accessed with the keyboard shortcut **F1**.



6. WHERE TO FIND THE RELEASE

IMC v1.6.1 is available via the Intel® Falcon™ 8+ download portal:

<https://downloadcenter.intel.com/download/28715/Intel-Mission-Control-Software>

7. HARDWARE AND SOFTWARE COMPATIBILITY

The following firmware components must be installed on the Intel® Falcon™ 8+ UAS and the Intel® Cockpit Controller in order to use it with flight plans created with IMC 1.6.1:

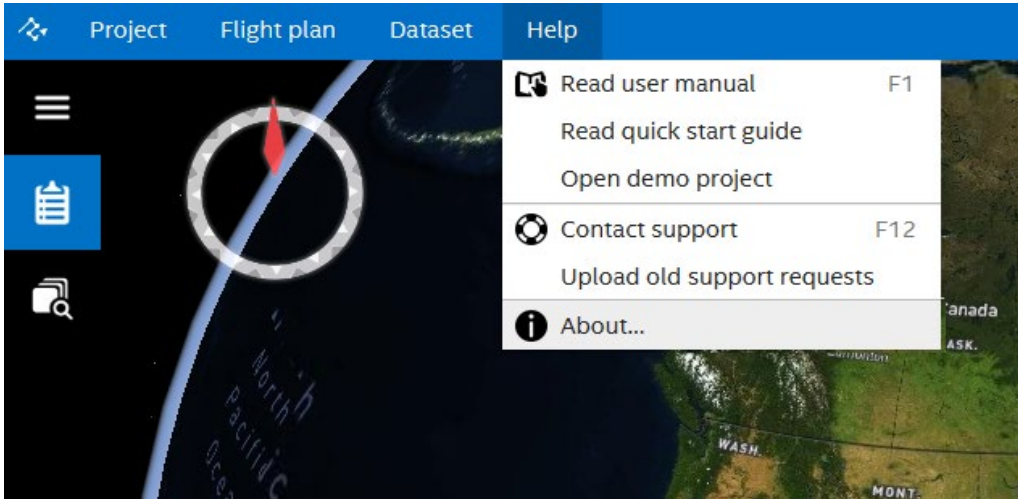
Bundle revision	Component	File	Component Revision
IF8P_firmware_ v1.7.1.ZIP or later	Intel Falcon 8+ UAV	TRINITY.ATF	1.7.1 or later
	Intel Cockpit Controller	COCKPIT.ATF	1.7.1 or later
	Intel Cockpit Control (tablet software)	CockpitControlInstaller_ v1.7.3.6.exe	1.7.3.6 or later

The firmware bundle can be downloaded via the Intel® Falcon™ 8+ download portal:

<http://www.intel.com/falcondownloads>

8. LEGAL INFORMATION

Please refer to the IMC license information provided by the installer and accessible through the **About** dialog of IMC:



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