



DEPARTMENT OF PHYSICAL OCEANOGRAPHY

W.H.O.I ARGO DATABASE

User Manual and Misc. Documentation

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Comment [A.E.1]: Update version

Comment [A.E.2]: Update tables

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4. Configuration

Argo Database Properties are configurable from in the XML file `argoweb:/home/argoweb/conf/argodb.cfg.xml`. Properties are updated from this from this file when the web application is loaded.

Comment [A.E.3]: Implement list of default locations for config file

4.1. Properties

Table 1 describes the configurable properties of `argodb.cfg.xml`. Values used for Argoweb are shown in *grey*. Property values that are currently set can be seen at http://argoweb.whoi.edu/argo_database_web/config.html.

Table 1: Argo Database Configuration Property Descriptions & Defaults

<code>floatdictionary.path</code>	Float Dictionary: <code>flt_dict.dat</code> <i>/Volumes/U1/argo/etc/flt_dict.dat</i>
<code>greylist.path</code>	Grey List: <code>ar_greylist.txt</code> <i>/Volumes/U2/GDAC/ar_greylist.txt</i>
<code>log.directory</code>	Log directory <i>/home/argoweb/log/</i>
<code>log.debug</code>	Option to toggle output of debug messages. “Y/y[es]” or “N/n[o]” <i>N</i>
<code>metadata.directory</code>	Metadata directory <i>/Volumes/U1/argo/metadata/aoml</i>
<code>solo.listing.argos.directory</code>	Solo ARGOS Listings directory <i>/Volumes/U2/argosite/listings/argos/</i>
<code>solo.listing.iridium.directory</code>	Solo Iridium Listings directory <i>/Volumes/U1/argo/data/iridium/</i>
<code>solo2.listing.directory</code>	Solo-II Listings directory <i>/Volumes/U1/argo/data/solo2/listings/</i>
<code>solo2.params.directory</code>	Solo-II Parameters directory <i>/Volumes/U1/argo/data/solo2/params/</i>
<code>solo2.queue.directory</code>	Directory for generated SBD and log files for Solo-II mission parameter upload <i>/data/solo2/queue/</i>
<code>solo2.queue.upload.mailto</code>	Email address to mail SBD files to for Solo-II mission parameter upload <i>data@sbd.iridium.com</i>
<code>solo2.queue.upload.process</code>	Process to call for generating SBD files Solo-II mission parameter upload <i>/usr/local/bin/solo2_upload</i>

Comment [A.E.4]: Debug output toggle not yet implemented

5. Solo-II

This section describes the functionality of the Solo-II pages (<http://argoweb.whoi.edu/solo2/>).

5.1. Source Files & Updator

The Solo-II Updator ensures that Solo-II records are updated periodically.

Comment [A.E.5]: Describe updator functionality

5.2. Home Page & Summary Table

The Solo-II “Home” page provides a summary table of all know Solo-II floats. Each entry links to its corresponding Overview page.

Solo-II						
Show 25 entries		Search:				
WHOI	WMO	# Dives Reported	Last Reported Dive	Last Reported Time	Last Cycle Length (Days)	Next Anticipated Surfacing
7038	3901036	8	7	2012/07/03 - 10:07	9.92	2012/07/13 - 08:15
7040	3901003	8	7	2012/07/06 - 05:17	9.91	2012/07/16 - 03:05
7039	3901002	8	7	2012/07/05 - 07:53	9.93	2012/07/15 - 06:12
7037	3900842	9	8	2012/07/05 - 17:27	9.92	2012/07/15 - 15:34
7034	3900841	8	7	2012/06/24 - 20:28	0.00	
7031	3900840	8	7	2012/07/05 - 18:19	9.93	2012/07/15 - 16:34
7029	3900839	8	7	2012/07/04 - 00:04	9.93	2012/07/13 - 22:29
7027	3900838	8	7	2012/06/24 - 03:34	0.00	
7026	3900837	8	7	2012/07/06 - 01:17	9.93	2012/07/15 - 23:39
3038		19	18	2012/06/25 - 17:54	0.00	
3039		21	20	2012/07/07 - 15:49	19.93	2012/07/27 - 14:13
3040		19	18	2012/07/10 - 04:11	10.03	2012/07/20 - 04:52
3041		19	18	2012/07/09 - 15:25	10.00	2012/07/19 - 15:22
3042		19	18	2012/07/10 - 01:30	10.01	2012/07/20 - 01:39
7001		35	35	2012/07/05 - 14:23	9.97	2012/07/15 - 13:39
7002		35	35	2011/11/30 - 17:48	0.00	
7003		35	35	2012/07/08 - 13:19	9.98	2012/07/18 - 12:44
7004		35	35	2012/07/10 - 19:33	10.00	2012/07/20 - 19:26
7005		34	34	2012/07/03 - 13:51	9.97	2012/07/13 - 13:14
7006		34	34	2011/11/28 - 20:18	0.00	
7007		34	34	2012/07/07 - 00:04	9.98	2012/07/16 - 23:28
7008		34	34	2012/07/09 - 11:30	10.00	2012/07/19 - 11:28
7009		34	34	2012/07/11 - 00:06	9.99	2012/07/20 - 23:46
7010		34	58	2012/06/25 - 02:50	0.00	
7011		33	33	2012/07/03 - 16:33	9.97	2012/07/13 - 15:52

Showing 1 to 25 of 151 entries

First Previous 1 2 3 4 5 Next Last

Figure 1: Solo-II: Summary Table

5.2.1. Summary Table Field Descriptions

WHOI	Unique WHOI identifier (float serial number). Links to
WMO	Unique WMO identifier, if available
# Dives Reported	Number of distinct dive numbers reported
Last Reported Dive	Last reported dive number
Last Reported Time	Timestamp of last reported dive, taken from second GPS data timestamp (YYYY/MM/DD – hh:mm)

Last Cycle Length (Days)	Length of previous cycle in days, as determined by GPS data timestamp of previous two cycles
Next Anticipated Surfacing	Date and time of next anticipated surfacing as determined by ‘Last Reported Time’ and ‘Last Cycle Length (Days)’

5.3. Overview

The Solo-II overview page contains some information about the float, its listings, and its mission parameters. This page links to the corresponding float, listing, and mission parameter pages.

Solo-II: WHOI #7038

WHOI	7038
WMO	3901036
AOML	4465

Float Page [View](#)

+/- Listings

Last Surface <small>Date of last reported surfacing</small>	Tue Jul 03 10:07:00 EDT 2012
Cycle Length <small>Length of previous cycle</small>	9.92 days
Next Surface <small>Date of next anticipated surfacing</small>	Fri Jul 13 08:15:00 EDT 2012

Listings [View All \(8 total\)](#)

+/- Mission Parameters

Reported <small>Reported Mission Parameters</small>	View All (1 total)
---	------------------------------------

Comment [A.E.6]: update

Figure 2: Solo-II: Overview Page

5.4. Listings

The Solo-II Listings pages contain all information about Solo-II listings.

5.4.1. Listings Overview

The Listings Overview page contains all data parsed from the Solo-II Listing files, grouped by dive number, and sorted by date. Each Header line is a clickable dropdown menu, and sections contained in each listing are denoted by the markings denoted by *Table 2: Solo-II: Listings - Sections*.

Table 2: Solo-II: Listings - Sections and Corresponding Field Codes

A	Argo Mission Parameters
E	Engineering Data
G	GPS Data
M	Solo-II Mission Parameters
P	Profile Data
R	Rise & Fall Data
S	Shore Commands
X	Section NOT included in listing

Solo-II: Listings - WHOI #7038		<< Overview
Legend		
A	Argo Mission Parameters	
E	Engineering Data	
G	GPS Data	
M	Solo-II Mission Parameters	
P	Profile Data	
R	Rise & Fall Data	
S	Shore Commands	
X	Section NOT included in listing	
<hr/>		
+/- 2012/07/03 - 10:07 - Dive 7		A E G M P R S
+/- 2012/06/23 - 11:59 - Dive 6		A E G M P R S
+/- 2012/06/13 - 14:10 - Dive 5		A E G M P R S
+/- 2012/06/03 - 16:24 - Dive 4		A E G M P R S
+/- 2012/06/02 - 16:43 - Dive 3		A E G M P R S
+/- 2012/06/01 - 17:09 - Dive 2		A E G M P R S
+/- 2012/05/31 - 19:59 - Dive 1		A E G M P R S
+/- 2012/05/31 - 09:27 - Dive 0		A E G M P R S

Figure 3: Solo-II: Listings - Overview Page

5.4.1.1. Argo Mission Parameters

A Argo Mission Parameters

Profile Depth dBar
Target profile depth

Drift Depth dBar
Target drift depth

Drift Time minutes
Target time at drift depth

Ascent Rate cm/s
Target ascent rate

Seek
Number of seeks to drift depth

Maximum Rise Time minutes

Maximum Descent Time to Drift minutes
Maximum time to descend from surface to target drift depth

Maximum Descent Time to Profile minutes
Maximum time to descend from drift to target profile depth

A33 2 1500 1000 600 400 1 540 11 1 2200

Figure 4: Solo-II: Listings – Argo Mission Parameters

5.4.1.2. Engineering Data

Not yet implemented.

Comment [A.E.7]: Implement Engineering Data

5.4.1.3. GPS Data

The figure shows two screenshots of the 'GPS Data' interface. Each screenshot displays a set of parameters for a specific GPS fix. The top screenshot is for an 'END_OF_DIVE' mission on June 1, 2012, at 17:09:00 EDT. The bottom screenshot is for a 'START_OF_DIVE' mission on May 31, 2012, at 20:09:00 EDT. Both screenshots show 4 satellites in view, HDOP values of 1.4 and 1.8 respectively, and SNR values of 34, 39, and 45. A data table at the bottom of each screenshot provides a compact summary of the fix data.

Fix ID	Date	Time	Lat	Lon	Time (s)	Satellites	HDOP	SNR (min)	SNR (mean)	SNR (max)
G 2 2	2012/06/01	17:09	-18.17312	-85.05883	220	4	1.4	34	39	45
G 2 1	2012/05/31	20:09	-18.12673	-85.04891	50	4	1.8	30	39	45

Figure 5: Solo-II: Listings – GPS Data

5.4.1.4. Solo-II Mission Parameters

The screenshot shows the 'Solo-II Mission Parameters' interface. It features a 'View reported Mission Parameters' button and a scrollable text area containing the following parameters:

```

Abort Parameters
-----
ABcymn=60

Ascent & Descent Timing Parameters
-----
Fall0=360
Rise0=180
Pwait0=0
Fall1=400
Rise1=600
Pwait1=100
Rise2=600
Fall2=400
Pwait2=200

CTD Parameters
-----
PROup=1
BLOK=null
    
```

Figure 6: Solo-II: Listings – Reported Mission Parameters

5.4.1.5. Profile Data

P Profile Data						
Pressure - nPts						540
Number of pressure data points						
D01	2	300	12	1	0	
D01	2	240	12	2	1	
Temperature - nPts						540
Number of temperature data points						
D02	2	240	12	4	1	
D02	2	300	12	3	0	
Salinity - nPts						540
Number of salinity data points						
D03	2	300	12	5	0	
D03	2	240	12	6	1	
# SBD						12
Total number of SBD messages containing profile data						

Figure 7: Solo-II: Listings – Profile Data

5.4.1.6. Rise & Fall Data

Not yet implemented.

Comment [A.E.8]: Implement Rise & Fall Data

5.4.1.7. Shore Commands

Not yet implemented.

Comment [A.E.9]: Implement shore commands

5.5. Mission Parameters

Solo-II mission parameters are divided into sections by their corresponding upload commands. The mission parameter sections and upload commands are shown in Table 3: Solo-II: Mission Parameters – Sections Grouped by Corresponding Upload Commands.

Table 3: Solo-II: Mission Parameters – Sections Grouped by Corresponding Upload Commands

#	Seek Parameters
C	CTD Parameters
D	Drift Parameters
F	Sleep Parameters
H	Hydraulic Pump Parameters
I	Abort Parameters
L	Surface Drift Parameters
S	Surface Communication Parameters
T	Ascent & Descent Timing Parameters
V	Air Vent Parameters
Z	Dives, Target Depths, and Descent Pump Time Parameters

Figure 8 shows the flow of data for Solo-II mission parameters.

Comment [A.E.10]: Describe Solo2 mission parameter data flow

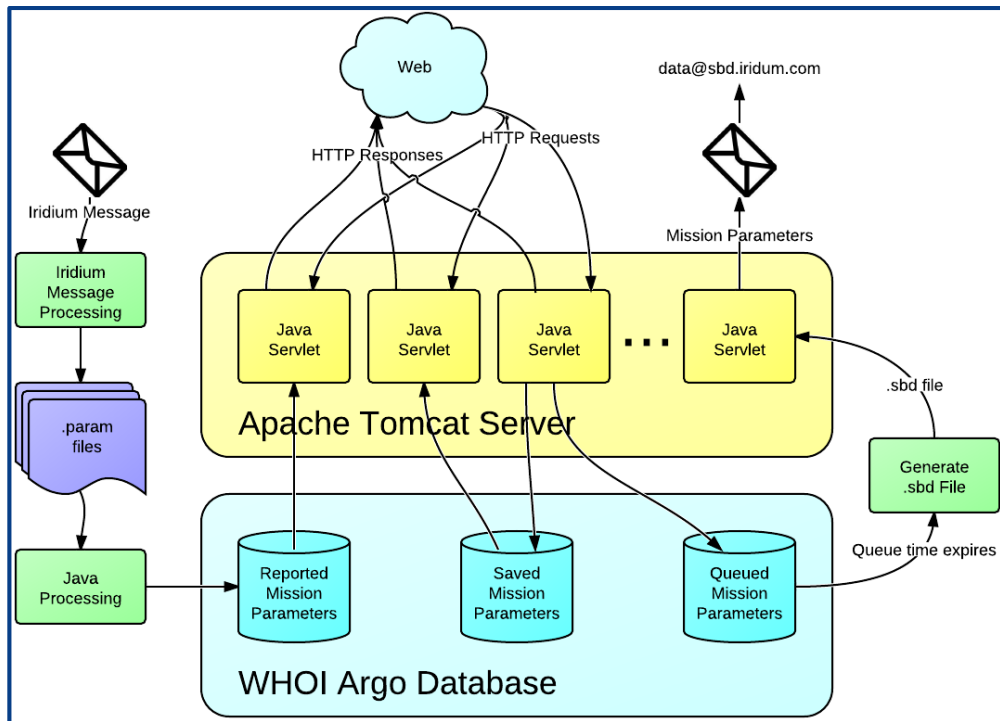


Figure 8: Solo-II: Mission Parameters - Data Flow Diagram

5.5.1. Reported Mission Parameters

Solo-II mission parameters are parsed from the listing files, when they are reported by the float. Typically, Solo-II mission parameters are only reported as a result of a ‘P’ command (Information Request) being received by the float.

5.5.1.1. Summary Table

The Solo-II Reported Mission Parameters splash page gives a summary table of all reported mission parameters, indexed by WHOI ID and dive number. The mission parameters sections reported are indicated by the ‘Mission Parameter Sections’ field. Each entry links to the corresponding Overview page, listing file, and Reported Mission Parameter Overview page

Solo-II: Reported Mission Parameters

Mission Parameters Sections by Upload Command

- # Seek Parameters
- C CTD Parameters
- D Drift Parameters
- F Sleep Parameters
- H Hydraulic Pump Parameters
- I Abort Parameters
- L Surface Drift Parameters
- S Surface Communication Parameters
- T Ascent & Descent Timing Parameters
- V Air Vent Parameters
- Z Dives, Target Depths, and Descent Pump Time Parameters
- Mission Parameter Section NOT Reported

WHOI	WMO	Dive #	Timestamp	Mission Parameter Sections	Listing File	Mission Parameters
7038	3901036	2	2012/06/01 - 17:09	# C D F H I L S T V Z	7038_002.lis	view
7040	3901003	0	2012/06/03 - 03:26	# C D F H I L S T V Z	7040_000.lis	view
7039	3901002	1	2012/06/02 - 15:07	# C D F H I L S T V Z	7039_001.lis	view
7037	3900842	5	2012/06/05 - 23:24	# C D F H I L S T V Z	7037_005.lis	view
7034	3900841	2	2012/06/03 - 02:24	# C D F H I L S T V Z	7034_002.lis	view
7031	3900840	0	2012/06/02 - 15:27	# C D F H I L S T V Z	7031_000.lis	view
7029	3900839	1	2012/06/01 - 05:52	# C D F H I L S T V Z	7029_001.lis	view
7027	3900838	0	2012/05/22	# C D F H I L S T V Z	7027_000.lis	view
7026	3900837	0	2012/06/02 - 21:09	# C D F H I L S T V Z	7026_000.lis	view
3038		1	2012/02/13 - 23:31	# D F H I L S T V	3038_001.lis	view
3039		6	2012/02/26	# D F H I L S T V	3039_006.lis	view
3039		9	2012/03/19 - 22:24	# D F H I L S T V	3039_009.lis	view
3040		11	2012/04/30 - 21:23	# D F H I L S T V	3040_011.lis	view
3041		2	2012/02/17	# D F H I L S T V	3041_002.lis	view
3042		2	2012/02/17	# D F H I L S T V	3042_002.lis	view
3042		11	2012/04/30 - 22:14	# D F H I L S T V	3042_011.lis	view
7001		2	2011/09/07 - 08:56	# C D F H I L S T V Z	7001_002.lis	view
7002		3	2011/09/09 - 19:47	# C D F H I L S T V Z	7002_003.lis	view
7003		5	2011/09/13 - 04:01	# C D F H I L S T V Z	7003_005.lis	view
7003		6	2011/09/23 - 03:26	# C D F H I L S T V Z	7003_006.lis	view
7008		17	2012/01/21 - 11:23	# C D F H I L S T V Z	7008_017.lis	view
7010		4	2011/09/25 - 23:34	# C D F H I L S T V Z	7010_004.lis	view
7010		48	2012/06/01 - 22:02	# D F H I L S T V Z	7010_048.lis	view
7010		50	2012/06/02 - 00:03	# D F H I L S T V Z	7010_050.lis	view
7011		4	2011/09/27 - 11:43	# C D F H I L S T V Z	7011_004.lis	view

Showing 1 to 25 of 79 entries

Figure 9: Solo-II: Mission Parameters – Reported Mission Parameter Summary Table

5.5.1.2. Overview

The Solo-II Reported Mission Parameters Overview page contains the mission parameters reported in a single listing. Mission parameters are divided into sections by upload command. Reported mission parameters values on this page can be modified and used to generate an upload command to be sent to any float.

Solo-II: Reported Mission Parameters

[<< Overview](#)
[<< Listings](#)

WHOI
WMO
AOML
Float Page [View](#)

Download

Download 7038_002.lis
Download listing file

+/- Information Requests	
+/- Exceptions	
+/- Seek Parameters	#
+/- CTD Parameters	C
+/- Drift Parameters	D
+/- Sleep Parameters	F
+/- Hydraulic Pump Parameters	H
+/- Abort Parameters	I
+/- Surface Drift Parameters	L
+/- Surface Communication Parameters	S
+/- Ascent & Descent Timing Parameters	T
+/- Dives, Target Depths, & Descent Pump Time Parameters	Z
+/- Air Vent Parameters	V
+/- Save Mission Parameters	

Figure 10: Solo-II: Mission Parameters – Reported Mission Parameters Overview

5.5.2. Queued Mission Parameters

Not yet implemented.

5.5.3. Saved Mission Parameters

Not yet implemented.

5.5.4. Uploading Mission Parameters

Figure 11 overviews the Solo-II mission parameters upload process. Mission parameters can be uploaded in one of two ways. A new set of mission parameters can be generated by using the Solo-II Upload Mission Parameters page. Alternatively, a set of mission parameters can be modified and/or uploaded from a set of existing saved or reported mission parameters.

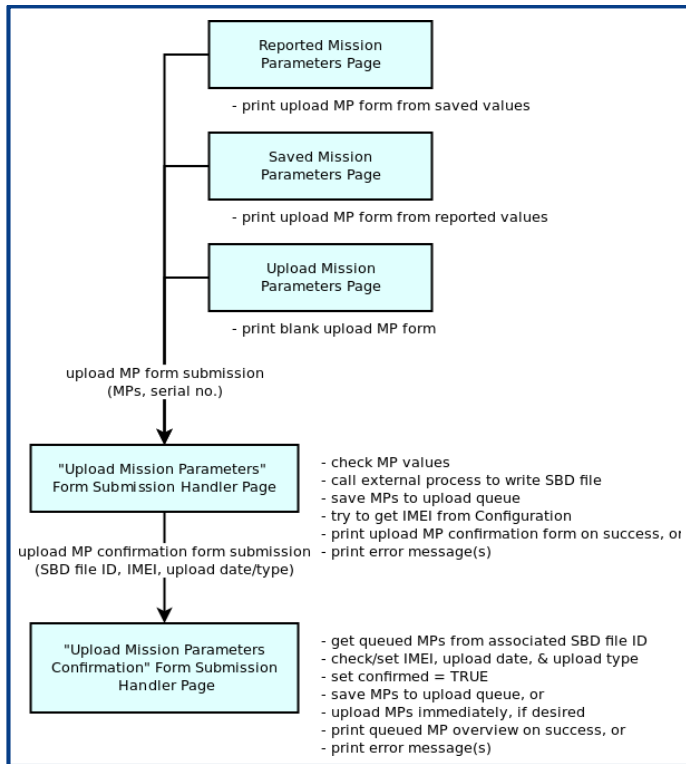


Figure 11: Solo-II: Mission Parameters – Upload Process Overview

5.5.4.1. "Upload Mission Parameters" Form Submission Handler Page

This page handles all mission parameter upload submissions, regardless of their source.

Comment [A.E.11]: update

As a result of a web-form submission for uploading Solo-II mission parameters, an upload command is generated, a remote process is invoked to generate an SBD file from the upload command, and the output of the remote process is captured and displayed.

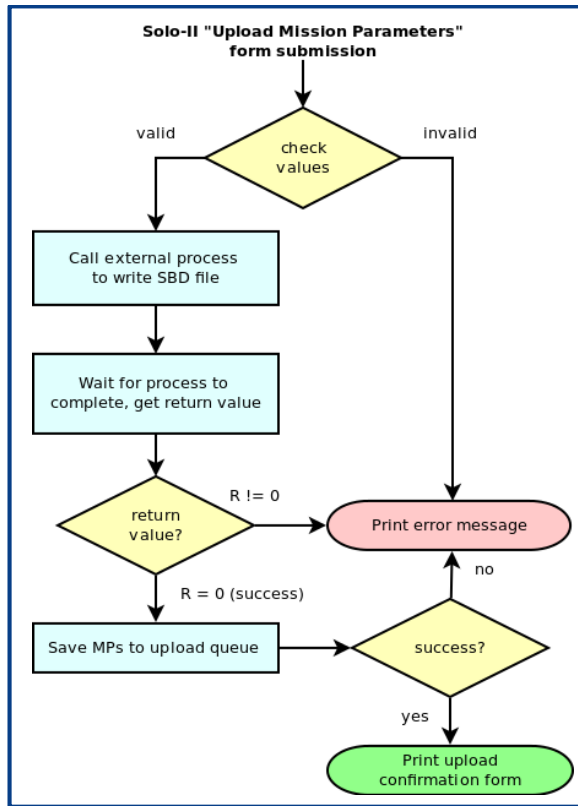


Figure 12: Solo-II: Mission Parameters - "Upload Mission Parameters" Form Submission Handler Flow Diagram

Mission Parameter Upload Confirmation

WHOI

Timestamp
Time of command submission

User Alex Ekholm

+/- Upload Command

P 7038;

Size bytes
Size of upload command

+/- Command Processing

```

Serial number: 7038
Processing command: 'P 7038;'
Command to dump mission parameters correctly entered.
Successfully read 1 command(s).
Final output (7 bytes):
'P 7038;'
Updating log file:
'/Volumes/U1/argo/argo_database/solo2/queue/sbd_log7038.log'
Creating/overwriting SBD command file:
'/Volumes/U1/argo/argo_database/solo2/queue/sn7038_1342035975511.sbd'
Closed SBD command file.
                    
```

Return Value
Return value of external process (0 indicates success)

SBD File sn7038_1342035975511.sbd
Generated short data burst file

+/- Upload Options

IMEI

Enter corresponding IMEI number

None. Do not upload this command.
 Immediate. Command will be uploaded immediately.
 Next Surfacing. Command will be uploaded at the next anticipated surfacing (unknown).
 At a specified date. Enter date below.

When would you like to upload the command?

Comment [A.E.12]: Update

Figure 13: Solo-II: Mission Parameters – “Mission Parameter Upload Confirmation” Form

5.5.4.1.1. Mission Parameter Upload Types

In order to upload a generated SBD file, the user must enter the corresponding IMEI number and select an upload type.

<i>None</i>	The SBD file will NOT be uploaded
<i>Immediate</i>	The SBD file will be uploaded immediately
<i>Next Anticipated Surfacing</i>	Not yet implemented.
<i>At a Specified Date</i>	Not yet implemented.

5.5.4.2. "Mission Parameter Upload Confirmation" Form Submission Handler Page

Comment [A.E.13]: Describe confirmation form handler

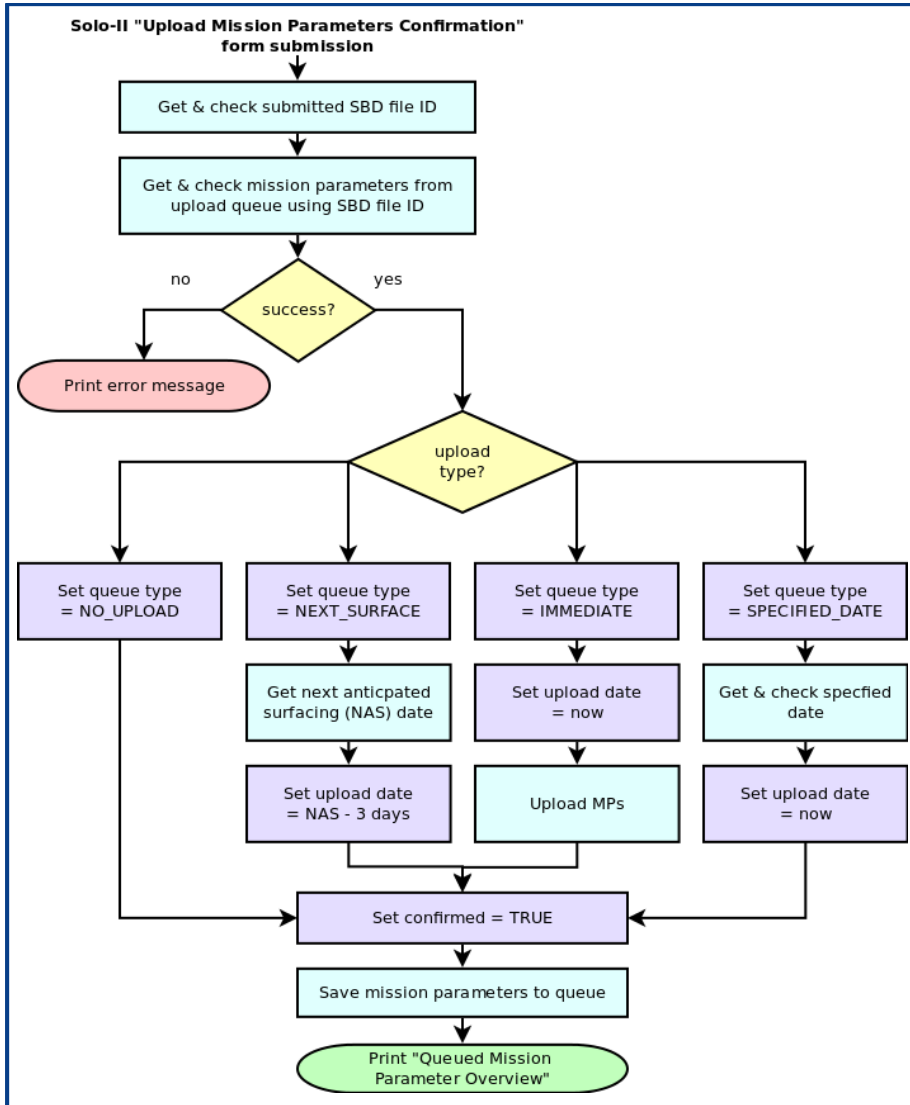


Figure 14: Solo-II: Mission Parameters - "Mission Parameter Upload Confirmation" From Submission Handler Flow Diagram

6. Appendix A: Database Schema

6.1. Solo-II

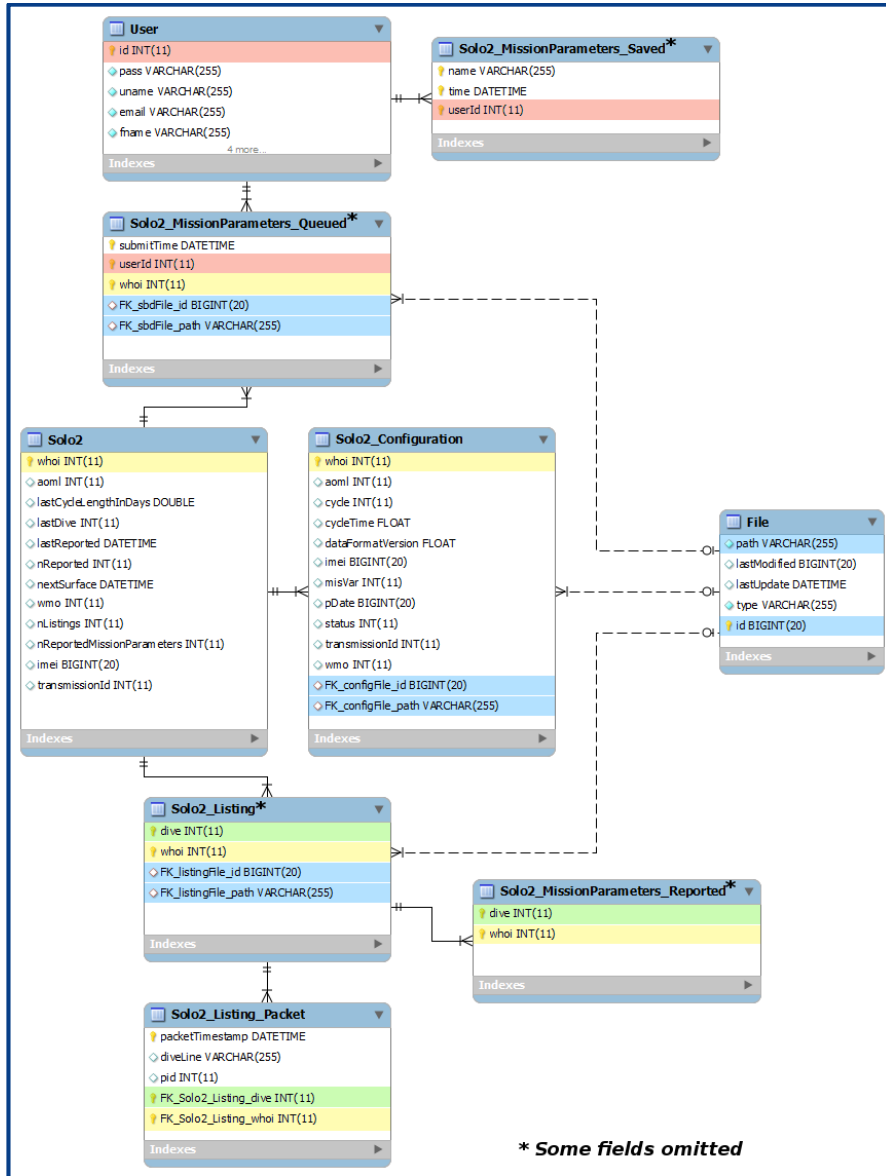


Figure 15: Database: Solo-II - Entity-Relationship Model

6.1.1. Procedures and Functions

Solo2_Update_Configuration(IN whoi INTEGER)

This procedure updates tables 'Solo2', 'Solo2_Listing' from table 'Solo2_Configuration.' The fields that are updated are IMEI, transmission ID, WMO ID, and AOML ID.