

3. Description of autoISF features

V 1.1

Please note that with autoISF you are in an early-dev. environment, where the user interface is **not optimized for safety** of users who stray away from intended ways to use. Good safety features exist, but these are only as good as the development-oriented user understands and implements them. This is not a medical product, refer to disclaimer in [section 0](#)



- 3.1 Overview
- 3.2 ISF modulation flowcharts
- 3.3 Exercise mode and dynamic iobTH
- 3.4 Automation options with autoISF parameters
- 3.5 Activity monitor
- 3.6 Using one-minute CGM (Libre 3)
- 3.7 AutoISF parameters overview table
- 3.8 Emulator for logfile analysis and tuning
- 3.9 Links to related case studies/detailed doc.s

[Related case studies:](#)

Links to more [case studies](#) or detailed docu on special topics: See [section 3.9](#)

3.1 Overview

autoISF can be used to refine the workings of your **Hybrid Closed Loop**.

If you use autoISF for Hybrid Closed Loop, you exclusively can do so by studying the documents linked in this [section 3](#), all available from Github/ga-zelle (repo autoISF and repo APS-what-if).

Note that the **apk to build** your autoISF variant of AAPS (and the installation instructions for it) is elsewhere: <https://github.com/T-o-b-i-a-s/AndroidAPS/>; for Trio see [_](#), and iAPS see: <https://github.com/mountrcg/iAPS>

autoISF allows also to build a top performing **Full Closed Loop**.

FCL is the sole topic in all other sections of this FCL e-book. <https://github.com/bernie4375/FCL-potential-autoISF-research>

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The **general workings of autoISF** are best characterized with the chart that is included in [section 4.1](#). It sketches which of the autoISF parameters have a key role of managing your bg curve, in its characteristic different post-meal stages.

39 A comprehensive description of autoISF is the devloper's Quick Guide here:

- 40 • [https://github.com/ga-](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)
41 [zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)

42
43 See screenshot below for current content.

44
45 Always watch out to use the most up-to-date [?/ latest version \(branch in the Github repo\) /?](#)

https://github.com/ga-zelle/autoISF/tree/A3.2.0.4_ai3.0.1

autoISF Public

A3.2.0.4_ai3.0.1 12 Branches 0 Tags Go to file

This branch is 29 commits ahead of, 1 commit behind A3.2.0.2_ai3.0 .

ga-zelle	final proof reading	abd8e
	bernie's guide to FCL	Link to Github/bernie4375, and table of contents
	ExerciseMode.ods	For playing with half_basal_temp_target
	ExerciseMode.xlsx	For playing with half_basal_temp_target
	How-to-get-larger-SMBs.pdf	Added max_job limit effect
	Libre_serpent.mp4	screen recording
	README.md	Update README.md
	To prebolus or not to prebolus.pdf	New document
	autoISF3.0.1_Kurzanleitung.pdf	final proof reading
	autoISF3.0.1_Quick_Guide.pdf	final proof reading
	smooth1x10m_S20FE.avi	place holder; better example to follow

README

46
47 Note: The developer provides some materials also in German language in (t)his Github repo.

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3.2 ISF adaptation flowcharts

autoISF calculates every 5 minutes (and more often if you use Libre3) an ISF (called sens) to use in place of your profile_ISF (profile.sens, which remains an important anchor point).

autoISF 3.0.1 ff users on Android can see on the 1st page of their **SMB tab**, how these calculations (and how their individual settings re. profile, safety limits, but also set TT etc.) determine sens and SMB size.

Set of flowcharts describing calculation of sens (the concluded effective ISF to use, as in SMB tab:)

- **page 1 – 6 of the Quick Guide:** https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf

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3.3 Exercise mode and dynamic iobTH

autoISF is geared towards aggressive treatment. However, in an exercise context, it is desirable to have built-in features that allow manage situations with much less typical insulin need.

autoISF has several special features to address this, which all are described here:

Exercise mode:

- on **page 7** of the **Quick Guide:** https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf

Dynamic iobTH:

- is explained under the headline “internal automation for iobTH” on **page 9** of the **Quick Guide:** https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf
- Calculators to determine how half-basal exercise target, set TT influence sens and iobTH, (in .xls or odt format), here: https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/ExerciseMode.xlsx and https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/ExerciseMode.ods

Consult [Section 6](#) of this FCL e-book for more guidance to find appropriate exercise-related settings for your favorite types of exercise

88 SMB delivery ratio:

- 89 • on **page 10** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)
90 [zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)

91

92 Even/odd target (for SMB on/off)

- 93 • see **page 11** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)
94 [zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)

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96 Loop power level characterization in the SMB tab

- 97 • is explained see **page 12** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)
98 [zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)

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100 The ai % indicator underneath the Autosens % on the AAPS screen

- 101 • is explained also on **page 12** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)
102 [zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)

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105 3.4 Automation options with autolSF parameters

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108 autolSF provides AAPS users an expanded set of Conditions and Actions to choose from, when
109 setting up an Automation.

110

111 autolSF parameters available in Automations (as Condition, and/or Action) are described:

- 112 • on **page 11** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)
113 [zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autolSF/blob/A3.2.0.4_ai3.0.1/autolSF3.0.1_Quick_Guide.pdf)

114 Caution: In FCL with AutoISF, please do not rush into setting up lots of Automations to “fine tune” (this is discussed in
115 detail in [section 4.6-4.7](#), and [section 5](#)). Rather, first try to do a good job following (in FCL) the sequence as laid out in
116 the
117 FCL e-book.

118

119 3.5 Activity Monitor

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122 autolSF also comes with an Activity Monitor. You can calibrate it to your personal sensitivity swings
123 as they may relate to stepcount, or to periods of total in-activity.

124 Activity monitor description:

- 125 • see **page 8** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)
126 [zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)

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129 3.6 Using 1-minute CGM (Libre3)

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132 1 minute Libre3 data use in autoISF:

- 133 • go to **page 13** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)
134 [zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)

135 Especially if you go for FCL: The issue over-arching your hope for avg maybe 2 minutes earlier clues from the CGM
136 must be: Solid non-jittery performance (see [section 1.4](#)).

137

138 3.7 Additional parameters in autoISF (18), and recommended start settings

139 In an older version you may see (17), as iobTH% was missing in the list. Default setting for this should
140 be around 50 (more see FCL e-book [section 2.4](#)).

141

142 The table in Attachment 1 of the Quick Guide gives an overview of additional settings if you
143 operate autoISF to its full potential.

144

145 The default, and recommended start of tuning suggestions in this table are made for Hybrid Closed
146 Loopers.

147 For FCL, please consult this FCL e-book

148

149 Table showing all autoISF parameters w/ default settings see: all autoISF parameters see: ...

- 150 • on **page 14** of the **Quick Guide**: [https://github.com/ga-](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)
151 [zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)

152

153 autoISF settings screen in AAPS/Preferences (inside the OpenAPS SMB menu), see:

- 154 • last page of the **Quick guide** = **page 15** : [https://github.com/ga-](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)
155 [zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/autoISF3.0.1_Quick_Guide.pdf)

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158 3.8 Emulator for AAPS logfile analysis

159 The links given in section 3.8 are numbered for easier referencing in other text.

160 It can be impractical to real-time inspect the SMB tab (or take screenshots for later inspection).
161 To determine which of your settings should be changed for better performance, the autoISF
162 developer provides an extra tool, the Emulator. It is described in another repo:

164 1).Emulator documentation

- 165 • [https://github.com/ga-zelle/APS-what-](https://github.com/ga-zelle/APS-what-if/tree/A3.2.0.4_ai3.0.1/Documentation%20in%20English)
166 [if/tree/A3.2.0.4_ai3.0.1/Documentation%20in%20English](https://github.com/ga-zelle/APS-what-if/tree/A3.2.0.4_ai3.0.1/Documentation%20in%20English) (watch for latest version branch)

ga-zelle / APS-what-if

<> Code Issues 1 Pull requests Actions Projects Security Insights

Files

A3.2.0.4_ai3.0.1 + 🔍

Go to file t

Documentation in English

- A README.md
- DRAFT - Guide to VDF Files for the...
- DRAFT - autoISF2.2_How_to_start_...
- Example Emulator study - Negativ...
- How-to-create-the-autoISF-factor...
- How-to-preview-autoISF-impact.pdf
- Installation Guide.pdf
- The AAPS Logfile System.pdf

> Dokumentation auf Deutsch

> software

- Anleitung determine_basal emulator...
- Das System der AAPS Logfiles.pdf
- Demo_Sports_Adaptations.vdf
- Instructions determine_basal emulat...
- README.md
- change.log

APS-what-if / Documentation in English /

ga-zelle Case study using emulator

This branch is 17 commits ahead of A3.2.0.2_ai3.0 .

Name

- ..
- A README.md
- DRAFT - Guide to VDF Files for the AAPS Emulator.pdf
- DRAFT - autoISF2.2_How_to_start_tuning.pdf
- Example Emulator study - Negative IOB Problem or else.pdf
- How-to-create-the-autoISF-factor-plot.pdf
- How-to-preview-autoISF-impact.pdf
- Installation Guide.pdf
- The AAPS Logfile System.pdf

- 167 •

168 2).Emulator installation guide see:

- 170 • [https://github.com/ga-zelle/APS-what-](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/Installation%20Guide.pdf)
171 [if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/Installation%20Guide.pdf](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/Installation%20Guide.pdf)

172 FCL e-book sections 10 (PC) and 11 (phone) offer additional installation guidance.

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174

175 3).How to start tuning guide for HCL – (consult this FCL e-book additionally if you go FCL), see:

176 • <https://github.com/ga-zelle/APS-what->

177 [if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/DRAFT%20-%20autoISF2.2_H](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/DRAFT%20-%20autoISF2.2_H)

178 [ow_to_start_tuning.pdf](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/DRAFT%20-%20autoISF2.2_H)

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180 FCL e-book sections 10 (PC) and 11 (phone), plus associated case studies, offer additional guidance for
181 interpretation and tuning, with focus on application in Full Closed Loop.

182

183

184 This “emulator” tool does not require building an apk.

185 Go to “software” and download the needed (mostly python) files. Then follow installation guide(s).

186

187 4).Software download for PC and Android phone here:

188 • https://github.com/ga-zelle/APS-what-if/tree/A3.2.0.4_ai3.0.1/software

189 Specifically, there are these examples of .vdf files for what-if investigations offered to download (for
190 use, or for customization):

191 5).

192 6).https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Demo_Sports_Adaptations.vdf

193 7).

194

195 Note that tuning your settings for Full Closed Loop is a very difficult project in which you should follow the
196 sequence of [sections 1 -6](#) of this e-book.

197 Especially in your “section 4 phase”, the Emulator is a great tool to use (refer to [sections 10](#) and [11](#)),

198

199 The emulator can also be used for AAPS SMB+UAM without (or with only a few) autoISF features
200 utilized

201

202 3.9 Links to related case studies or other detailed documents

203 The links given in section 3.9 are numbered for easier referencing in other text.

204

205 1).reserved for [=case study 3.1:](#)

206 (link)#

207

208 2).To pre-bolus or not to pre-bolus = [case study 3.2:](#)

209 <https://github.com/ga->
210 [zelle/autoISF/blob/A3.2.0.4_ai3.0.1/To%20prebolus%20or%20not%20to%20prebolus.pdf](https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/To%20prebolus%20or%20not%20to%20prebolus.pdf)
211
212 3).Analyzing a negIOB situation with the emulator = [case study 3.3](#)
213 <https://github.com/ga-zelle/APS-what->
214 [if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/Example%20Emulator%20study%20-%20Negative%20IOB%20Problem%20or%20else.pdf](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/Example%20Emulator%20study%20-%20Negative%20IOB%20Problem%20or%20else.pdf)
215
216 4).reserved for [=case study 3.4:](#)
217 (link)#
218
219 5).reserved for [=case study 3.5:](#)
220 (link)#
221
222
223 6).How to get larger SMBs
224 https://github.com/ga-zelle/autoISF/blob/A3.2.0.4_ai3.0.1/How-to-get-larger-SMBs.pdf
225
226 7).How to pre-view autoISF impact
227 <https://github.com/ga-zelle/APS-what->
228 [if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/How-to-preview-autoISF-impact.pdf](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/How-to-preview-autoISF-impact.pdf)
229
230 8).How to create the autoISF factors plot
231 <https://github.com/ga-zelle/APS-what->
232 [if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/How-to-create-the-autoISF-factor-](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/How-to-create-the-autoISF-factor-plot.pdf)
233 [plot.pdf](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/How-to-create-the-autoISF-factor-plot.pdf)
234
235 9).Guide to vdf files for emulator
236 <https://github.com/ga-zelle/APS-what->
237 [if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/DRAFT%20-%20Guide%20to%20VDF](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/DRAFT%20-%20Guide%20to%20VDF%20Files%20for%20the%20AAPS%20Emulator.pdf)
238 [%20Files%20for%20the%20AAPS%20Emulator.pdf](https://github.com/ga-zelle/APS-what-if/blob/A3.2.0.4_ai3.0.1/Documentation%20in%20English/DRAFT%20-%20Guide%20to%20VDF%20Files%20for%20the%20AAPS%20Emulator.pdf)
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241
242 10).How to