

Full Closed Loop (FCL) Using autoISF 3.0 .. V18

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75 0. Introduction

77 Exploring Full Closed Loop potential of-autoISF-3.0 (= readme.md in github/ bernie 4375)

78 Authors are no medical professionals but T1 diabetics (or parents of a T1D child) who report their -
79 limited - understanding and experience, in an effort to contribute to a growing body of knowledge,
80 and to facilitate development of patient centered solutions. Nothing in this site is medical advice,
81 but meant to stimulate patient-driven self-responsible research, and meant also to stimulate pro-
82 duct developments by the medical industry.

83 Introduction

84 Full Closed Loop using Automations is represented in AAPS Master and in the related readthedocs
85 since autumn 2023. (<https://androidaps.readthedocs.io/en/latest/Usage/FullClosedLoop.html>).

86 Pre-requisites and the principal function of a Full Closed Loop, *without the user ever giving a bolus*
87 *and without entering any carb info* are explained, also in a couple of other languages, there.

88 The essential points are summarized also below, in section 1.

89 autoISF is being developed as a much more sophisticated alternative for FCL, allowing better
90 %TIR performance at higher degree of daily „freedom“ than simpler approaches to FCL could.

91 However, this demands much higher degree of involvement by the user (- as you shall see, follo-
92 wing us through this paper. *Of note, parts of this paper notably sections 5.2 and 6.3 describing*
93 *functions of the "FCL cockpit" are not implemented at launch* because the developers had to focus
94 on more core functions).

95 With autoISF, and especially with the intention to use it for Full Closed Loop, you are in the early
96 development area. It is therefore important to observe the warnings given below, as well as the
97 hints given by the developers in the respective manuals (readme files on their Github pages; for
98 autoISF with AAPS the main ones are <https://github.com/T-o-b-i-a-s/AndroidAPS/> and
99 <https://github.com/ga-zelle/autoISF/>).

100 autoISF has also been ported into an early development branch of iAPS (oref(1) for i-Phone)
101 (<https://github.com/mountrcg/iAPS>).

102 First of all, a tip: If the following looks too complicated for you - and it's not just about under-
103 standing, but also about time requirements and discipline during implementation - you would be
104 well advised to first try the Full Closed Loop in a simpler form with Automations (reference see
105 above, and section 13.1): Depending on the quality of their HCL tuning they are starting from, their

106 expectations for %TIR, and on rapid carb contents of their diet, an increasing number of people
107 succeed in making a respectable start the first time they try using AAPS in Full Closed Loop mode.
108 See also the first published medical study that included 16 patients using AAPS, who found, on
109 average, comparable %TIR performance when using a basic Full Closed Loop mode: [https://pub-](https://pub-med.ncbi.nlm.nih.gov/36826996/)
110 [med.ncbi.nlm.nih.gov/36826996/](https://pub-med.ncbi.nlm.nih.gov/36826996/)
111 Alternatively - and this is also done by many people - you can use some techniques used in hybrid
112 closed loop, such as using a pre-bolus with autoISF, or try other early DEV variants mentioned in
113 section 13.3, which also undergo permanent further development (Boost, AIMI, EatingNow,
114 Tsunami).
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