



0. Introduction

1. Pre-requisites for Full Closed Loop

- 1.1 Well tuned hybrid closed loop
- 1.2 Fast insulin
- 1.3 Reliable insulin delivery from pump and cannula
- 1.4 Excellent CGM
- 1.5 Meal-related limitations?
- 1.6 Lifestyle-related limitations?
- 1.7 Time required for setting-up
 - Case study 1.1: Occlusion
 - Case study 1.2: Comparing insulins for FCL
 - Case study 1.3: Jumpy CGM
 - Case study 1.4: Lost pump connection
 - Case study 1.5: Permanent CGM values w/ 2x G6

2. General Settings for Full Closed Loop

- 2.1 SMB range extension
- 2.2 Max and min autoISF ratio
- 2.3 SMB delivery ratio
- 2.4 iobTH (iob_threshold_percent)
- 2.5 Eating Soon TT?
- 2.6 General settings in AAPS/Preferences

3. Description of autoISF / guidance by developers

- 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

4. Meals: Setting ISF_weights in AAPS/Preferences

- 4.1 Getting started
- 4.2 bgAccel_ISF_weight
- 4.3 pp_ISF_weight
- 4.4 bgBrake_ISF_weight
- 4.5 dura_ISF_weight
- 4.6 Tuning your initial settings
- 4.7 Complex scenarios
- 4.8 Profile helper
 - Case study 4.1: Pizza
 - Case study 4.3: Hands-off FCL around Christmas

5. Temp. modulation of autoISF aggressiveness

5.1 Automatic modulation of loop aggressiveness

- 5.1.1 autoISF off outside of meal windows
- 5.1.2 SMB off @ odd profile target
- 5.1.3 SMB off @ odd temp. target
- 5.1.4 Automatic diff. of FCL aggressiveness via Automations
- 5.1.5 Automatic diff. of FCL aggressiveness via Activity Monitor
- 5.1.6 Pro/con completely hands-off FCL

5.2 Manual modulation of FCL aggressiveness via DIY cockpit

- 5.2.1 Status recognition
- 5.2.2 Manual interventions from DIY cockpit
 - 5.2.2.1 Temp. %profile or TT settings

Skip what is in green writing:
= Drafted fragments or
not implemented ideas.
Please contribute, or wait for
update with the missing info

58	5.2.2.2 Temp. settings in /preferences
59	5.2.2.3 Grey DIY cockpit buttons for pre-programmed FCL responses
60	5.2.3 Temporary exit from FCL
61	5.3 Manual modulation of FCL aggressiveness via improved cockpit
62	5.3.1 Violet FCL icon and underlying buttons
63	5.3.2 Bottom buttons "insulin" etc.
64	5.3.3 Top three fields
65	5.3.3.1 TT dialogue field
66	5.3.3.2 Exercise button / dialogue field
67	5.3.3.3 Profile dialogue field
68	5.4 Recognizing loop state from the AAPS home screen
69	5.4.1 Color scheme (grey/yellow) of the top 3 fields (profile, exercise, TT)
70	5.4.2 Info on the top 3 fields (profile, exercise, TT)
71	5.4.3 FCL related indicator fields
72	5.4.4 Overall AAPS home screen
73	Case study 5.2: Sweet snacks / Glühwein w/ DIY cockpit
74	6. Temp. modulation for exercise and light (In-)activity
75	6.1 Dynamic iobTH and sensitivity ratio
76	6.1.1 Manual (direct) iobTH modulation
77	6.1.2 Automations for iobTH modulation
78	6.1.3 Dynamic iobTH
79	6.2 Temp. % profile switch
80	6.3 DIY cockpit based on User action Automations
81	6.4 Improved FCL cockpit
82	6.4.1 Manual (direct) iobTH modulation
83	6.4.2 pre-set 4 kinds of exercise
84	6.4.3 optional meal pre-sets
85	6.4.4 optional hypo management pre-sets
86	6.5 Mastering the exercise after meal challenge
87	6.5.1 Manual mode
88	6.5.2 DIY cockpit button for User action Automation
89	6.5.3 Using pre-sets in improved FCL cockpit
90	6.6 Activity monitor based on step-counter
91	Case study 6.2 Biking day with hi carb lunch; DIY cockpit
92	7. Advanced HCL (meal announcement via pre-bolus)
93	7.1 Hurdles for FCL
94	7.2 Getting ready to advance from HCL
95	7.3 Reduced pre-bolus
96	7.4 Tuning autoISF in HCL
97	7.5 Dealing with disturbances/ins. sens/resistance
98	7.6 Exercise management
99	7.7 Remote control (small children) (fragment, to be completed NN)
100	7.8 Other methods w/ meal announcement (MA)
101	8. Performance monitoring and tuning
102	Case study 8.2: Futility of tuning based on 1 extreme meal
103	9. Trouble shooting
104	10. Emulator on PC to determine settings
105	10.1 Installing the Emulator on your PC
106	10.2 Analyzing loop decisions in logfiles
107	10.3 What-if analysis
108	11. Emulator on the smartphone
109	11.1 Installing the emulator on your smartphone
110	11.2 Checking loop decisions on the smartphone
111	11.3 Options available on i-Phone (for Trio or iAPS)
112	11.4 Real-time checking a „what-if“ question using speech synthesis

Skip what is in green writing:
 = Drafted fragments or
 not implemented ideas.
 Please contribute, or wait for
 update with the missing info

113	12. Remarks for users of previous autoISF version
114	13. Other avenues to Full Closed Loop
115	13.1 FCL using AAPS Master and Automations
116	Case study 13.1: Comparison 1 mo FCL Automation vs autoISF
117	13.2 dynamicISF used for Full Closed Loop
118	Case study 13.2: Using dynISF for FCL (NN)
119	13.3 Methods involving simple meal announcement that might be stretched into a FCL
120	13.3.1 Boost
121	Case study 13.3: Boost-based FCL for a child
122	13.3.2 AIMI,
123	13.3.3 EatingNow
124	13.3.4 Tsunami
125	13.4 No-bolus looping with precise carb Inputs
126	13.5 Machine Learning (AI)
127	13.6 Dual hormone systems