Glossary

For an introduction into the topic of **Artificial Pancreas Systems** ("Looping"), see**:**

- https://github.com/danamlewis/artificialpancreasbook/

- and https://androidaps.readthedocs.io/en/latest/Resources/clinician-guide-to-AndroidAPS.html#for-clinicians-a-general-introduction-and-guide-to-aaps.

- Overview over all DIY loops https://www.diabettech.com/user-resources/hcp-loop-guide/

For a resource on key topics like ISF, meal management etc. see the pdf collection in the HCL branch of: https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings

The parallel default branch with a "**FCL-e-book**" https://github.com/bernie4375/FCL-potential-autoISF-research- is for advanced users.

Term	Description	see also	more details @
AAPS	AAPS is the name of an **Open Source** (aka " DIY") looping app: On **A**ndroid phones, Bluetooth connected with an insulin pump and a **CGM**, it provides an **Artificial Pancreas System** Broadest choice of pumps and CGMs of any looping option	Android Studio: iAPS iOS Loop	https://androidaps.readthedocs.io/en/latest/introduction.html#what-is-android-aps-aaps
AAPS Client	AAPS can be monitored and controlled remotely via the AAPSClient app and optionally via the associated Wear app running on Android Wear watches		https://androidaps.readthedocs.io/en/latest/GettingStarted/FAQ.html#configuring-and-using-the-aapsclient-remote-app
acceleration	mathematical analysis of the **bg** development can reveal earliest signs of a bg rise (highly relevant in -> **FCL** w/**autoISF**). Growing **bg delta**s can show acceleration too, with a ~ 10-20 minutes delay. A de-celerating rise indicates a bg peak will soon be reached.		https://github.com/ga-zelle/autoISF/blob/A3.2.0.2_ai3.0/autoISF3.0_Quick_Guide.pdf FCL-e-book, section 4.2
Activity Monitor	feature of some loop systems that allow adaptation of loop **aggressiveness** with ~ past hour data from the phone's (or watch') motion monitor (evtl also heart rate).	aggressiveness	FCL-e-book, section 5.1.5
aggressiveness of the loop	more aggressive loop settings will deliver more insulin, often via a lowered temporary **ISF** being applied to a needed correction, or also via a temp. lowered **bg target**. A more aggressive loop helps fight temp. insulin **resistance** (e.g. after fatty meals). Conversely, e.g. in an exercise context, higher ISF and higher temp.glucose target	resistance sensitivity	FCL-e-book, section 5

	help deal with increased insulin **sensitivity.**		
AIMI	dev variant of AAPS involving simple **Meal Announcement (MA)** that might be stretched into a FCL		FCL-e-book 13.3.2; https://discord.gg/tPDQzS3Bq3
algorithm	the algorithm is a set of calculations and plausibility/safety checks the loop goes through every 5 minutes (upon receipt of a new **CGM** value), to define what to do, notably in terms of more insulin delivery for **control of bg** (to bring it to target)	control; oref; insulin kinetics	https://openaps.readthedocs.io/en/latest/docs/While%20You%20Wait%20For%20Gear/Understand-determine-basal.html#understanding-the-basic-logic-written-version
AMA	advanced meal assist - algorithm to handle carbs via %**TBR** (without SMBs)	SMB	Wiki - AMA
Android Studio	(free) developer software needed to complete and maintain your personal copy of **AAPS** (for **iAPS** and iOS Loop: see **Xcode**)	Github	https://androidaps.readthedocs.io/en/latest/Installing-AndroidAPS/troubleshooting_androidstudio.html#troubleshooting-android-studio
Anubis	DIY re-engineered transmitter for Dexcom **G6 CGM**; lasts unlimited (evtl. battery change); will not shut down sensor at 10.0 days (as factory transmitters do). For more info: „Followers of Anubis" Facebook group	G6 G6 x 2	https://docs.google.com/forms/d/e/1FAIpQLSdGtAmwqkBUaMVbBPENF_eRBSz7ZMcCz-3CjLxwc4TC6_RH5w/viewform
apk	software installation file (Android application package)		Wiki - Building APK
APS	**A**rtificial **P**ancreas **S**ystem. Semi-automatic insulin delivery system that, coupled with a **CGM**, can regulate bg to target. Besides DIY systems (OpenAPS, AAPS, iAPS and iOS Loop) that pioneered this area, there is an increasing number of commercial systems now available	AAPS; iAPS; iOS Loop CGM	https://iaps.readthedocs.io/en/latest/resources/alternative.html#comparison-table-of-automated-insulin-delivery-systems ; https://github.com/danamlewis/artificialpancreasbook/
Artificial Pancreas System (APS)	a system which works to automatically keep blood sugar levels within healthy limits: by detecting **glucose levels**, using these values to do **calculations**, and then delivering the (predicted) right amount of **insulin** to the body. It repeats the calculation, every few minutes, 24/7.		https://androidaps.readthedocs.io/en/latest/introduction.html#what-is-an-artificial-pancreas-system
autoISF	**dev** variant of 1. **AAPS**/ (or of 2. **iAPS**) working with **oref**, SMB+**UAM**, with very sharp adaptation of **ISF** to glucose curve (**acceleration**, **delta**, level, stuck-at-high). Ideal for **FCL** but difficult to set up	FCL	1. https://github.com/T-o-b-i-a-s/AndroidAPS/ 2.https://github.com/mountrcg/iAPS

	("tune"). Useful also in HCL (tuning different)		FCL-e-book
Automation (Feature integrated in AAPS; other loops may need 3rd party software; or "middleware")	1. analyze patterns in YOUR data, (at times, geo-locations, or bg and iob patterns that point to a problem …) where you want your loop act differently: carve out Conditions that describe the situations 2. Define Actions (loop settings for different aggressiveness) for x minutes Specifically in **AAPS**: **User Action Automations** enable -> **DIY cockpit**	Automated aggressive-ness modulation DIY cockpit	https://androidaps.readthedocs.io/en/latest/Usage/Automation.html#automation https://androidaps.readthedocs.io/en/latest/Usage/automationwithapp.html#automation-with-third-party-android-automate-app
Autosens	calculation of **sensitivity** to insulin as a result of exercise, hormones etc.	iob delta	DIABETTECH - Autosens
Autotune	Autotune can be used to get suggestions how to tune **profile basal**; it gives also one 24h average **IC** and **ISF** suggestion. Controversial; not for use with **dynamicISF**, **autoISF**:		https://androidaps.readthedocs.io/en/latest/Usage/autotune.html#how-to-use-autotune-plugin-dev-only https://iaps.readthedocs.io/en/main/settings/configuration/autotune.html#autotune
basal rate	the basal rate defined in the **profile** (that you give to your loop to work with) is the amount of hourly insulin to maintain BG at a stable level, in absence of **-> disturbances**	IC / ISF profile disturb-ance	
bg	blood glucose: the tissue glucose that all CGMs measure reflects the blood glucose, with a couple of minutes of delay. (This, plus the minutes of spacing between **CGM** values, adds to the "sluggishness" of getting our bg regulated by the loop).	control (sluggish-ness) Libre 3	
bg_delta	see **delta**		
bg source	the blood glucose source is the source where your bg values come from. They come from a **CGM** system which you wear through some kind of integration software like **BYODA, xDrip+**	CGM / FGM	Wiki - BG source
BMI	body mass index		
Boost	dev variant of AAPS involving simple **Meal Announcement (MA)** that can be stretched into a FCL		Fcl-e-book 13.3.1; https://discord.gg/nYC4T9PgCR
BYODA	Build Your Own Dexcom App - a special way to generate your own Dexcom App	xDrip+	Dexcom G6

	for reading out the transmitters and pass **smoothened bg** values on for looping (- e.g. direct into AAPS, or via **xDrip**+, while retaining the option to use Clarity® as your doc office may want you to use)		https://docs.google.com/forms/d/e/1FAIpQLScD76G0Y-BlL4tZljaFkjlwuqhT83QlFM5v6ZEfO7gCU98iJQ/viewform
Calculator	**HCL** systems (and pump therapy in general) come with bolus calculators for suggesting bolus size for meals. Not important for advanced loopers (SMB+**UAM**)		
calibration (of CGM)	if your symptoms disagree with what the CGM shows: test with your blood glucose meter; calibration is one (but not always the best) option then	CGM	https://navid200.github.io/xDrip/docs/Calibration.html
carb absorption	1) foods with slower absorption are easier to manage with insulin 2) 30 g/h seems a max (heavy eaters: do not bolus for more g than digested while your bolus goes strong!) 3) for **oref** systems the **min5mCarbImpact** defines the lower border of plausibility. 4) oref loops calculate delta **cob** from bg **delta** and **iob** delta (using ISF and IC) 5) note that drugs,e..g.Ozempic® or co-morbidities, e.g.gastroparesis have pro-found effects (inform yourself about implications re. carb abs. corridor).	cob; iob iob delta; eCarbs; FPU; insulin kinetics	https://androidaps.readthedocs.io/en/latest/Usage/FullClosedLoop.html#meal-related-limitations https://github.com/danamlewis/artificialpancreasbook/blob/master/8.-tips-and-tricks-for-real-life-with-an-aps.md#heres-the-detailed-explanation-of-what-we-learned
carb ratio	we use the term **IC** factor for this	IC	
CGM	continuous glucose monitor (Dexcom, Libre, and other systems)	bg source G7, 6…; Libre 3	https://www.diabettech.com/cgm/six-of-the-best-digging-further-into-the-statistics/
circadian (sensitivity, basal rate, ISF…)	basal need, **IC** and **ISF** vary over 24 hours according to a „circadian" pattern of varying sensitivity to insulin. Improper profile settings will "use up and waste" some of the loop system's capab-ility to correct for disturbances.	disturbance	Section 5. in "ISF determ…pdf" : https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings
Closed Loop	closed-loop systems make automatic adjustments to basal delivery (**TBR**), without needing user-approval, based on an **algorithm**; some also can automatically bolus (**SMB**)	Open Loop	https://androidaps.readthedocs.io/en/latest/Resources/clinician-guide-to-AndroidAPS.html#for-clinicians-a-general-introduction-and-guide-to-aaps ;

			Wiki closed loop
clinician support of DIY systems	the references given demonstrate increasing consensus to support DIY solutions as suitable for their patients		https://androidaps.readthedocs.io/en/latest/introduction.html#support-for-diy-looping-by-other-clinicians
cob (g)	carbs on board is the amount of carbohydrates currently available for digestion ("that still needs **iob**").	carb ab-sorption; iob	https://androidaps.readthedocs.io/en/latest/Usage/COB-calculation.html#how-does-aaps-calculate-the-cob-value
connectivity	numerous options for Bluetooth or WLAN connected devices. Additional open-source software and platforms (which are not shown in reference, e.g. Automate!, or Android Auto) can also be integrated.		https://androidaps.readthedocs.io/en/latest/introduction.html#what-is-the-connectivity-of-the-aaps-system
control of bg (sluggishness)	balancing **carb absorption** with **insulin activity** is a very difficult „sluggish" control problem - very much like boating. See slides 11-19 in "Meal Mgt….pdf".	carb ab-sorption; insulin kinetics; bg	"Meal Mgt….pdf" in: https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings
delta	delta bg =d5=in past 5 minutes: important anchor point for loop calculations (see e.g.. in SMB tab of AAPS) . short avg delta= d15=avg. of last 3 deltas long avg.delta=d40= avg. of last 8 deltas All 3 delta categories show in the top section of the AAPS main screen	iob delta	
dev	def version (of **Master** release) or dev variant (different, often extra, features to Master) are software undergoing development or in pre-Master-release testing	autoISF; Boost; and many others	
Dexcom	**CGM**, see **G7**, **G6**		
DIA (hours)	duration of insulin action	insulin kinetics	Wiki insulin types DIABETTECH - DIA
disturbance	Factors like meals and exercise (and ~40 others) disturb the smooth operation that would be possible with a well set basal profile. The set **ISF**, or a temp. activated **exercise mode** may enable the loop to automatically manage the disturbance. In other cases, a **%profile switch** or other measures may be needed.	ISF; exercise mode; %profile switch	https://diatribe.org/poster-now-available-42-factors-affect-blood-glucose FCL-e-book, section 5.2
DIY cockpit	term used for * having all buttons to "tweak" loop **aggressiveness** on the main screen of the closed loop phone * using tools like "**user action Automation**s" in		FCL-e-book, section 5.2.2

	AAPS to construct extra buttons for this purpose These can be programmed to show only in pre-defined times, or geo-locations …		
Dual Hormone Loop	"Double closed loop" featuring insulin AND glucagon (in development): the glucagon component not only helps stay out of hypos. It enables a more aggressive treatment for preventing, or reducing, high glucose values, as well		FCL-e-book 13.6
dynamic carb absorption	every 5 minutes, **AAPS** and **iAPS** figure out carb absorption from **bg delta**, **insulin activity** consumed, and other data => looping without carb inputs possible	UAM	
dynamic carb ratio	automatic adaptation of **IC** to bg level and to past day(s) TDD (not useful in advanced oref looping)	iAPS	
dynamicISF	automatic adaptation of **ISF** to bg level and to past day(s) TDD; tuneable. Note: Autosens min/max defines how far from profileISF dynISF is allowed to go Caution: Can make life easier but can be inferior to using a well tuned **profile ISF** + being proactive with manual **%profile switch**es	sigmoid	https://androidaps.readthed ocs.io/en/latest/Usage/Dyna micISF.html#dynamicisf-dynisf
dynamic iobTH	**iob threshold** above which no more **SMB**s are given varies with the set exercise target (feature of **exercise mode** in **autoISF**)	iobTH exercise	see FCL-e-book section 6.1.3
dynamic bg target	your loop probably allows you to generally select "**sensitivity** raises bg target" and "**resistance** lowers bg target". Caution: Can lead to **rollercoaster**s, especially if your carb settings and daily inputs are not spot-on (=> skewed **Autosens**!)		
EatingSoon TT (mg/dl) or (mmol/L)	Concept going back to looping pioneer Dana Lewis: to set a very low temp. bg target ~ 1 h before meals, so the loop gets a low bg starting point, and also some pos. iob at meal start	pre-bolus	https://github.com/danamle wis/artificialpancreasbook/ blob/master/8.-tips-and-tricks-for-real-life-with-an-aps.md#how-to-do-eating-soon-mode
EatingNow	dev variant of AAPS involving simple **Meal Announcement (MA)** that might be stretched into a FCL		FCL-e-book 13.3.3; https://discord.gg/XqhnPR ChEP

eCarbs	"extended carbs" - carbs split up over several hours (i.e. lot of fat/protein) **extended bolus**es you might know from regular pump therapy do not make much sense when looping	FPU SMB	https://androidaps.readthedocs.io/en/latest/Usage/Extended-Carbs.html#what-are-ecarbs-and-when-are-they-useful eCarbs use case
Emulator	program to analyze **AAPS logfiles**, including what-if analysis Note: iAPS has some on-bord analytic capabilities	log files	https://github.com/autoisf/what-if
exercise mode	a loop mode which limits how high **iob** will/can go (any combination of: raising glucose target, lowering **profile basal**, elevating **ISF**, limiting iob)	TT %profile switch; dynamic iobTH	https://androidaps.readthedocs.io/en/latest/Usage/making-sport-with-AAPS.html#cycling FCL-e-book, section 6
extended bolus	frequently desired by looping beginners "to fight high bg", this contradicts the very idea of looping: the algo must receive the inputs to manage bg (tuning). Boli (also the initial meal bolus in **HCL**) disturb the workings of the loop (that shuts off for a while via **zero-temping**)	eCarbs	https://androidaps.readthedocs.io/en/latest/Usage/Extended-Carbs.html#extended-bolus-and-why-they-won-t-work-in-closed-loop-environment
FCL-e-book	Series of pdfs about **FCL**, with case studies (**autoISF** focused, but all other methods are presented and referenced)	FCL	https://github.com/bernie4375/FCL-potential-autoISF-research-
FPU (g)	Fat-Protein-Units, converted into g carb equivalent; rather than worrying too much about conversion factors for FPUs (2nd link; controversy see slide 30 ->) … … oref loopers should rather see to it that their loop can deal well with temporary (!) insulin resistance from fatty acid receptor blockages (3rd link)	eCarbs	https://iaps.readthedocs.io/en/latest/settings/services/fatprotein.html#fat-and-protein-conversion ; slide 30 in: "Meal Mgt..pdf" in:https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-setting https://androidaps.readthedocs.io/en/latest/Usage/FullClosedLoop.html#stagnation-at-high-bg-values
FCL: Full Closed Loop	Mode of closed looping without the user giving any boli, and without carb inputs. Depending on lifestyle and **%TIR** expectation, can run fully hands-off, or require a few button pushes at special **disturbances**, like heavier exercise. Setting up (personalized tuning) is difficult!	Hybrid Closed Loop (HCL) UAM	https://androidaps.readthedocs.io/en/latest/Usage/FullClosedLoop.html; FCL-e-book see: https://github.com/bernie4375/FCL-potential-autoISF-research-

G7, G6, ONE, G5	abbreviation for Dexcom sensor/transmitter **CGM** systems	BYODA	[Wiki - BG source](#)
G6 x 2 (overlapping)	method to get un-interrupted **CGM** values	Anubis; xDrip Variant	FCL-e-book: Case study 1.5
git	git in our context here is the tool to mainly download the **AAPS** sources from **Github** for the build process. It's version-control system for tracking changes in computer files and coordinating work on those files especially for teams. -> necessary for **apk** updates		[Wiki - update APK](#)
GitHub	web-based hosting service for version control using Git -> storage of source code, and of related documentation for: 1.) AAPS 2.a) iAPS 2.b) iOS Loop Note: **dev** variants are on other Github pages, see e.g. @ **autoISF**	1.Android Studio; 2.Xcode	1. [GitHub AndroidAPS;](#) 2.a.[Github_build_iAPS.yml](#) 2.b.[https://loopkit.github.io/loopdocs/gh-actions/gh-first-time/](#)
glucose target	corrections by the loop aim at that bg value set in the **profile** (for each hour of the day); depending on nature of disturbances, and properly set ISF, that value should be gradually reached over the course of 2-4 hours.	TT	
HCL: Hybrid Closed Loop	The usual mode of looping, with the user initiating a meal bolus (and making other frequent inputs, notably re. carbs). This is really a compromise owed to slow insulins in-capable of dealing with rapid carb absorption	calculator; extended bolus; FCL	[https://androidaps.readthedocs.io/en/latest/introduction.html#what-does-hybrid-closed-loop-mean](#)
iAPS	oref loop like AAPS but for i-phone Caution: As of Feb.2024 the docu is very incomplete, while features are constantly being added, bugs removed (and not fully Open Source). Not safe unless you constantly stay informed (disagreement on Discord vs Facebook groups on details!) Building requires Apple developer licence ($ 100/year), and Xcode.	Xcode AAPS	[https://discord.gg/JVXwG7gS](#) [https://www.facebook.com/groups/1351938092206709](#) [https://iaps.readthedocs.io/en/latest/;](#)
IC (carb ratio) (g/U)	factor (g/U) describing how many grams of carb are covered by one unit of insulin	ISF	IC determ……pdf" in: [https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings](#)
individualized tuning	DIY loops are not self-learning but require "tuning" to find proper <u>individual settings, 1) for Meal Management</u>	Object-ives;	HCL guidance in: [https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings](#)

	HCL: **AAPS Objectives**; **meal management** **FCL:** dial in your settings (incl. Automations) so the loop is enabled to mimic your successful HCL Meal Management (notably, similar insulin activity curve, going up a bit later, but very steep….) 2) finding individual temporary settings to adapt loop **aggressiveness** for other **disturbances** e.g. exercise Note 1: Tuning must follow a certain sequence (to avoid instability from counter-balanced multiple errors). Resist the temptation to just play around on the many "buttons" offered! Note 2: Learn not to interfere, make your loop – over time – fit to manage automatically	Meal management; FCL tuning	FCL-e-book in: https://github.com/bernie4375/FCL-potential-autoISF-research- other disturbances (than meals, see "42 factors..pdf"@HCL guidance), see e.g. sections 5 and 6 in FCL-e-book: https://github.com/bernie4375/FCL-potential-autoISF-research-
insulin activity (U/5 min)	part of **iob** that will become active in the upcoming 5 minutes (above profile basal supply => figure can be negative also)	insulin kinetics: blue curve	
insulin kinetics	**AAPS** insulin tab shows two curves: The pink curve starts at 1.0 (100%) and goes down to 0 (0%) when the **DIA** is over. It shows iob left, at any time. The blue curve shows how the activity goes: Practically nothing (!) for a bunch of minutes, then rapidly going high, and then slowly fading out out over the DIA period (with a maximum at time-to-peak). For its calculations, AAPS adds these blue curves up for all boli, **SMB**s and **TBR**s **profile basal** -> thin yellow "activity"curve you can see in your AAPS glucose screen!	control of bg (slug-gishness)	"Insulin_DIA…pdf" in: https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings "The artificial pancreas…pdf" in: https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings/blob/FCL-w/autoISF/The%20Artificial%20Pancreas%20and%20Meal%20Control.pdf
insulinRequired (U)	key parameter in the **oref** loop algo: From how **bg**, **iob** and **cob** resp. **carb deviation** develop (-> **predictions**), need for more insulin is calculated.	delivery rate	
iob (U)	insulin on board; units of insulin (above basal need) currently available to become (within the remainder of its DIA) active in your body (to deal with un-absorbed carbs, or with other disturbances)	insuilin activity	readthedocs
iob delta (U)	insulin used: for delta bg (~ iob delta / ISF) + for carb absorption (~ remaining iob delta*IC) Note: If implausible **carb absorption** results in this calculation, then IC and ISF are adapted and recorded in **Autosens** ≠ 100%	carb abs. 2), 3) min5m_carb.impact	

iobTH (U) *or* iobTH**%** (% of maxIOB)	iob threshold (set below **maxIOB**); at **iob** > iobTH, the loop will give no more boli (**SMB**) but only **TBR**	Iob; maxIOB; SMB	https://androidaps.readthedocs.io/de/latest/Usage/FullClosedLoop.html#iob-threshold
iOS Loop	easy DIY loop to set up on i-phone. Algorithm requires precise carb inputs at all meals (no **UAM** or **FCL**) Very limited choices of pumps	iAPS	https://loopkit.github.io/loopdocs/ https://www.loopandlearn.org/starting-loop/
ISF (mg/dl)/U or (mmol/L)/U	insulin sensitivity factor = the expected decrease in **bg** as a result of one unit of insulin; most important parameter in **oref** loops	IC	ISF determ…pdf" in: https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings
LGS	Low Glucose Suspend **AAPS** will reduce basal if **bg** is dropping. But if bg is rising then it will only increase basal if the **iob** is negative (from a previous LGS), otherwise basal rates will remain the same as your selected profile. You may temporarily experience spikes following treated hypos without the ability to increase basal on the rebound.	objective 6	
Libre 3	**CGM** ; also Libre2 (alternatives to **Dexcom** CGMs)	CGM bg	https://www.diabettech.com/cgm/battle-royale-freestyle-libre-3-and-dexcom-g7-face-off-the-results/;
Libre 3 1 minute	First option to run a 1-minute **CGM** - which could bridge a few minutes of "sluggish" delay in looping. This is particularly of interest in no-bolussing **FCL** (see 2nd reference ->).	bg; control (sluggish-ness)	https://github.com/Nightsco…/xDrip/releases/tag/2023.02.15 https://github.com/ga-zelle/autoISF
log files	record of all **AAPS** actions (useful for troubleshooting and debugging)		Wiki - log files
Master	Master is the latest official release, the software that should be used. Note that it is advisable to tune profile in Master **before** adding more features.	dev; vanilla	
maxIOB	safety feature: maximum total **iob** the loop can't go over. (can be limited by set patient type!)		https://androidaps.readthedocs.io/en/latest/Usage/Open-APS-features.html#maximum-total-iob-openaps-cant-go-over-openaps-max-iob
MDI	mulitple daily injections: option to manage your t1d with an insulin pen (and **bg** measurements or **CGM**). An option you should resort to in case components of your loop system are unreliable		https://androidaps.readthedocs.io/en/latest/introduction.html#how-does-aaps-compare-to-mdi-and-open-looping

	(pump, **occlusion**, erratic CGM, instable Bluetooth)		
Meal Announcement (MA)	MA is a closed looping mode between **HCL** and **FCL**: In contrast to HCL, no carbs are counted with an attempt to give a suitable meal bolus. But in contrast to FCL, some form of meal announcement must be made, usually by giving a small **pre-bolus**.		
Meal Management	Juggling (for every meal!) the differing carb and insulin absorption characteristics, so bg stays in range, is a tough, if at all possible, mission. Big effort should go into **individualized tuning** of the loop system, and into defining bolus strategies	EatingSoonTT; pre-bolus	„Meal Mgt.Basics.pdf" and „IC determ..pdf"in: https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings
middleware	custom algorithm add-ons (notably in **iAPS** that does not have the **Automation** feature of **AAPS**)	Automations	Middleware code for iAPS https://discord.gg/3JWQRzfyB2
min_5m_carb impact	safety feature (oref): default carb decay at times when **dynamic carb absorption** does not reasonably work out based on your bg reactions	iob delta; carb absorption	„min5m_CI …xls" in: https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings Wiki - config builder
negative iob	**iob** is defined as insulin on bord above **(profile) basal** need: If a correction was driven by a too aggressive **ISF**, too much iob might have been given around time of bg peak, and the loop goes into **zero-temping**. Neg.iob can occur (and can self-resolve, too). Too high set *profile* basal can be behind neg.iob. Likewise, if you forget to keep *temp.%*profile reduced after a day of exercise, your basal is *temporary-ly* too high, and neg.iob is likely.		
Nightscout	**open source** project to access and report **CGM** and related data. Also used by parents for remote child's diabetes management	Nightscout Reporter	Nightscout
Nightscout Reporter	Tool provided by a fellow looper to generate PDF reports from Nightscout web app data e.g. for meetings with your diabetes team.	Nightscout	Nightscout Reporter NS Reporter @ Facebook
NS Client	part of **AAPS** to connect to your Nightscout site		Wiki - NS Client
Objectives	learning program within **AAPS** guiding you step by step from open to closed loop		Wiki - objectives
occlusion	insulin the pump releases is not fully delivered in the body => persistent very		„"Occlusion..pdf" in:

	high **bg** despite (fake) high **iob** – dangerous, must be avoided!		https://github.com/bernie4375/HCL-Meal-Mgt.-ISF-and-IC-settings
OpenAPS	open artificial pancreas system: runs on small computers (i.e. Raspberry Pi) AAPS and iAPS use many of the OpenAPS features		OpenAPS docs
Open Loop	system will only <u>suggest</u> adjustments which have to be confirmed manually in the application	Closed Loop	Wiki - config builder
Open Source	philosophy to openly share product (especially, software) development without profit orientation, and not operating in narrow frameworks like mandated by e.g. regulations on medical products, (Alternatively, the prefix "DIY" is often used)	Github clinician support	
oref	the key algorithm behind OpenAPS, AAPS and iAPS. In SMB+**UAM** setting it enables looping without any carb inputs	dynamic carb absorption ;	Wiki - sensitivity detection
peak time or **time-to-peak** (minutes)	time to maximum effect of insulin given: shorter is better for looping, but also exposes bad tuning and can be unsafe (hypos!) for looping beginners	insulin kinetics	Wiki - config builder
pre-bolus	any meal containing rapid carbs will push **bg** high faster than insulin could become strongly active (nearing peak-time) to control this. Hence bolussing a number of minutes before meal start can be a good idea.	Meal Mgt. Eating SoonTT	
predictions	predictions for bg in the future, based on several different calculations; eventualBG uses traditional bolus calculator math. IOBpredBGs predicts only an eventual BG value, once all insulin activity takes effect. ZTpredBGs what will happen in the "worst likely case," if observed carb absorption suddenly ceases, and a zero-temp is applied until BG begins rising at/above target. COBpredBGs is calculated based on observed deviations since carb entry, assuming that carbs	insulinRequ.	Wiki - prediction lines https://openaps.readthedocs.io/en/latest/docs/While%20You%20Wait%20For%20Gear/Understand-determine-basal.html#understanding-the-purple-prediction-lines

	would continue to be digested/absorbed at a configurable minimum rate. UAMpredBGs Once deviations have peaked UAM calculations assume that the deviations will continue decreasing at that same rate until they reach zero. If they're decreasing, but too slowly, it assumes they'll decrease linearly to zero over 3 hours Note: loops look into predictions, not just on present **bg**, for decisions (see SMB tab in AAPS)		
profile	basic treatment settings (basal rate, DIA, IC, ISF, bg target) **AAPS** v3 only supports **local profiles** but Nightscout profiles can be copied (synchronized) to AAPS		Wiki - profile
profile switch (% other than 100)	temporary (= assigned with a duration) change of profile used reflecting percentual increase/decrease of insulin sensitivity (e.g. <<100% in an exercise context)		https://androidaps.readthedocs.io/en/latest/Usage/Profiles.html#profile-switch
remote control	DIY looping systems come with options for parents to remotely control their young kids' loops, e.g. via secure SMS commands		https://androidaps.readthedocs.io/en/latest/introduction.html#remote-control
resistance	above-normal insulin need, e.g. after a fatty meal	FPU	
roller coaster	term to describe bg curves that go steep down, then up, then down again … often a result of too aggressive **ISF; dynamic** settings (ISF, bg target etc) can also increase the tendency towards r.c.	ISF; dynamic ISF, bg …	
sensitivity	below-normal insulin need, e.g. after exercise that makes you temp. more insulin sensitive	exercise	
sensivity detection	calculation of sensitivity to insulin (based on **deviations** that cannot be "explained" by **carb absorption**) as a result of exercise, hormones etc.	Autosens	DIABETTECH - Autosens
sensor noise	unstable **CGM** readings leading to "jumping" values	CGM	Wiki - sensor noise
sigmoid	uses profile ISF and adjusts it "in S-curve shape" with glucose level above target, and **TDD**.	dynamic ISF	https://www.desmos.com/calculator/s9jxdmqhh8

	Can turn out more aggressive than standard **dynamicISF** if **Autosens** min/max is set wide open => not recommended for **iAPS** beginners		
SMB	small bolus given by the loop (advanced feature for faster bg adjustment vs **TBR**)	UAM iobTH	Wiki - SMB Wiki – AMA to SMB
SMB delivery ratio	defines which % (default 50 or 60%) of the calculated **insulinRequ**. shall be given now vs. waiting 5 more minutes, (and then again same % of what then is open, which includes the portion that had to wait). Caution: Using >75% not recommended as it does not provide room for **CGM** jitter, and reduces flexibility around **SMB**/**TBR** sizing to pull back on insulin delivery when required.		
SMB range extention	Bolus sizes the loop can give are severely restricted in **HCL** (usually to max 2x hourly basal). This factor multiplies to magnify "allowed" SMB size in **FCL**.		
Smoothing	**CGM** systems deliver raw **bg** values that can be too "jumpy" to use. The loop system and/or intermediate app that captures the transmitter signals offer options to smooth the values into a "realistic" bg curve. Smoother is safer (may be needed), but it slows the loop's treatment of bg rises	CGM	https://androidaps.readthedocs.io/en/latest/Usage/Smoothing-Blood-Glucose-Data.html#smoothing-blood-glucose-data https://www.diabettech.com/cgm/back-smoothing-or-not-back-smoothing-is-that-the-question/
TBR (% of profile basal)	temporary basal rate (given as % of profile basal). Note that *elevated* TBRs regulate **bg** far slower *down* than **SMB**s.		
TDD (U)	total daily insulin dose (bolus + basal per day) Note that **occlusions** can produce very noticeable false high TDD values!	dynamic ISF; occlusion	
TIR (%)	% of time **bg** is in a 70 – 180 mg/dl (3.9 – 10 mmol/L) range.		
Tsunami	dev variant of AAPS involving simple **Meal Announcement (MA)** that might be stretched into a FCL		FCL-e-book 13.3.4; https://discord.gg/veRKcgwVUT
TT (mg/dl) or (mmol/L)	temporary target: temporary increase /decrease of **bg** target (range) e.g. for exercise/for "eating soon"		Wiki - temp targets
TT (or target) **even / odd**	some looping softwares offer to set different behaviors (SMBs allowed /blocked), with setting even/odd numbered TT (or also profile target)	SMB	
tuning	see: **individualized tuning**		

UAM	**U**n-**A**nnounced **M**eals - Detection of significant increase in **bg** levels due to meals (but also adrenaline or other influences), and attempt to adjust this with SMBs. Carb inputs are optional.	dyn.carb absorption SMB FCL	[Wiki - SMB](#)
UTZ, CET	time zones: The AAPS loop data are generally recorded in UTZ time (universal Greenwich time). Your AAPS screen will show your Smartphone time zone, like central European daylight saving time (CET DST).	logfiles	[Wiki DST](#)
vanilla	term often used for Master version. Advice is not to make use of extras ("bells and whistles") before the basics are tuned in right. Reason: Errors can be balanced with counter-errors => instable system)	Master	
virtual pump	option to try AAPS functions without a pump connected	Open Loop	
_weight (-) e.g. bgAccel_ISF_weight	tuning factors used in **autoISF** to adapt **ISF** according to developing glucose curve	autoISF	FCL-e-book, section 4
wiki	readthedocs (docus		
Xcode	developer software (free, but $ 100/y developer licence) needed to complete and maintain your personal copy of **iAPS** (or **iOS Loop**) For AAPS, see Android Studio		https://loopkit.github.io/loopdocs/gh-actions/gh-first-time/
xDrip+	open source software to read **CGM** transmitters and pass (if desired, smoothened) values on for looping	BYODA	https://navid200.github.io/xDrip/docs/FAQ_page.html https://jamorham.github.io/#xdrip-plus https://navid200.github.io/xDrip/docs/Installation_page.html
xDrip Variant	Enables up to 4 parallel xDrip instances on smartphone	G6 x 2 (overlapping)	https://navid200.github.io/xDrip/docs/Variants.html
zero-temp(ing)	temporary basal rate with 0% (no basal insulin delivery); often seen after a bolus was given: moving some basal (from baseline need, as defined in profile) *into the bolus or SMB* provides for fastest correction; in turn, basal supply is reduced until safe to continue		