



## AGL 2019 Roadmap

*AGL All-Member Meeting Tokyo*

*March 5, 2019*

*Walt Miner ( [@VStarWalt](#) )*

*Community Manager, [AGL](#), [The Linux Foundation](#)*



# Before we start...

---

- We are an open source project which means:
  - Code, code, code
  - Commit Early, Commit Often
  - Everything we do is in the open and transparent

# Top 25 Git Committers in 2018

Commits	Name	Company
942	Romain Forlot	IoT.bzh
400	Jose Bollo	IoT.bzh
306	Jonathan Aillet	IoT.bzh
231	Matt Ranostay	Konsulko
188	Kazumasa Mitsunari	Witz
170	Jan-Simon Moeller	Linux Foundation
115	Ronan Le Martret	IoT.bzh
108	Thierry Bultel	IoT.bzh
98	Mark Farrugia	FiberDyne
87	Khang Nguyen	Renesas
82	Stephane Desneux	IoT.bzh
78	Sebastien Douheret	IoT.bzh

Commits	Name	Company
77	Loic Collignon	IoT.bzh
73	Changhyeok Bae	LG
72	Fulup Ar Foll	IoT.bzh
59	Frederic Marec	IoT.bzh
58	Zheng Wenlong	Nexty
57	Tadao Tanikawa	Panasonic
52	Matt Porter	Konsulko
41	Kevin Hilman	BayLibre
41	Tobias Jahnke	Microchip
41	Wang Zhiqiang	Nexty
39	Clement Benier	IoT.bzh
39	Thuy Tran	Renesas
31	Yuta Doi	Witz

3764 Total Commits  
73 Committers  
28 Companies

- 01 Jan 2018 – 31 Dec 2018
- Commits to master



# Top 20 Companies in 2018

Company	Commits
IoT.bzh	2301
Konsulko	351
Witz	219
Linux Foundation	170
Renesas	167
FiberDyne	120
Nexty	99
LG	73
BayLibre	61
Panasonic	57

Company	Commits
Microchip	50
Collabora	21
Mitsubishi Electric	12
Xevo	11
ADIT	10
Intel	8
Qt Company	7
Individual	6
AisinAW	5
Amazon	5

3764 Total Commits  
73 Committers  
28 Companies

- 01 Jan 2018 – 31 Dec 2018
- Commits to master



# Other Numbers

---

- 342 commits to flounder release branch in 2018
- 170 commits to eel release branch in 2018
- 9 commits to dab release branch in 2018
- **Grand Total = 4285 commits**
- 124 unique individuals and 41 unique companies have contributed to AGL since the start of the project
  - 33 new committers in 2018
  - 5 new companies contributed in 2018
- 11 individuals not affiliated with a member company have contributed
- 701 Jira issues closed during 2018
  - 1675 issues closed since start of project (through 20 Feb 2019)

# Thanks for all the fish...

---

Agile Albacore – Jan 2016  
Brilliant Blowfish – July 2016  
Charming Chinook – Dec 2016  
Daring Dab – July 2017  
Electric Eel – Jan 2018  
Funky Flounder – Ocr 2018  
Grumpy Guppy – Jan 2019  
Happy Halibut – July 2019  
Itchy Icefish – Jan 2020



# Call To Action

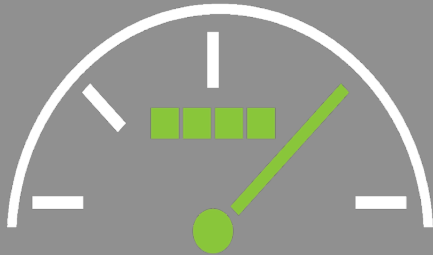
---

- YOU can move these projects forward
  - There are Projects that will get done this year because someone or some group is passionate about it.
- Join the automotive-discussions mail list
- Download the code
- Submit changes
- Have Fun!

# 2019 ROADMAP

---





# AUTOMOTIVE GRADE **LINUX**

the only  
organization  
addressing  
all software in  
the car



Infotainment



Instrument  
Cluster



Heads-up  
Display (HUD)



Telematics/  
Connectivity



Functional  
Safety



Advanced Driver  
Assistance Systems  
(ADAS)



Autonomous Driving

# ~~Vision~~ Results from 2018

- Major Content Providers Develop AGL Apps – **Amazon Alexa**
- OEMs Port Legacy Apps to AGL - **Unknown**
- Releases: Funky Flounder July 2018 and Grumpy Guppy for CES 2019 - **Completed**
- AGL App Framework Evolution
  - User Management – **User management updated and some testing. Need more feedback**
  - Power Management – **Not started**
  - Memory and CPU management – **Not started**

# ~~Vision~~ Results from 2018

- Sustainable Audio Solution – Major progress
- Video Player Reference App – not complete
- Home Screen and Window Manager Services Complete – Started. Progress slow.
- Chromium based HTML5 Apps – Web App Manager and Chromium 68 in GG
- Vehicle to Cloud Services – Minimal progress.
- Speech and Text to Speech Services – APIs available. Alexa demo shown at CES
- Reference Hardware System Architecture – Some progress.
- Portable AGL Test Rig - “Lab in a Box” - Available

# More Results from 2018

---

- Device Profiles fully available
- Instrument Cluster reference device available and shown at CES
- Telematics Reference device started

# Vision for 2019 & Beyond

---

- Window Manager and Home Screen Services
  - Window Manager and Compositor consolidation
  - Activity Manager
  - Input manager
- Video architecture for IVI, ADAS and Autonomous
- Sensor fusion architecture
- Smartphone connectivity – Plug in solution for Apple CarPlay and Android Auto

# Vision for 2019 & Beyond

---

- AGL production readiness
  - Speech Architecture
  - Web App Manager
  - Audio – pipewire vs. 4a
  - CAN and Vehicle signaling – CAN output + J1939
- Instrument Cluster evolution
- Telematics, ADAS, and HUD reference devices
- Next generation SOCs (RCAR gen 4, i.MX8)

# CES 2020 PROPOSAL

---

# CES 2019 : Three demo sets

## Stable



- **FF(2018/8 release) stable demo.**
- New Instrument Cluster Reference + FF reference Apps and latest audio management

## Alexa



- **Amazon Alexa demo**
- GG Reference Apps + Speech Rec API + latest Audio management

## Challenging

- **Japan Platinum/Gold POC**
- New H/S design, Mapbox, etc



# CES 2020

- Build new demo unit (IVI side)
- Multi-modal input manager including speech, steering wheel, center stack buttons, and gear shift controller/ wheel
- Landscape or portrait mode support
- Telematics and CAN
- New Reference Board



# CES 2020

## Video Solution for Multi-cam integration



# CES 2020: Three demo sets

## Stable



- **HH (2019/8 release) stable demo.**
- IVI, IC, Telematics, CAN, and HH reference Apps

## Cool



- **Multi – Modal demo**
- IVI with new center stack, IC, Production Steering Wheel

## Challenging

- **Japan Platinum/Gold POC**
- TBD

# HAPPY HALIBUT

---

# Happy Halibut

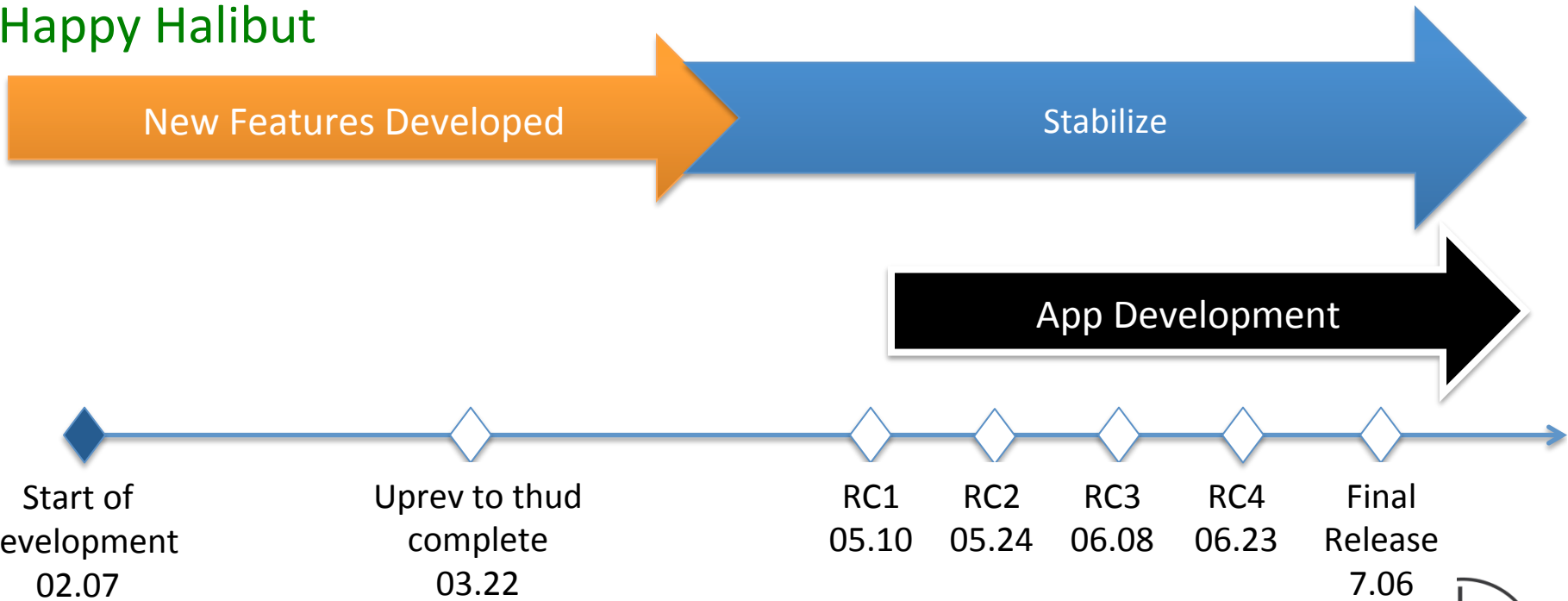
---

- Upgrade to Yocto 2.6 – Thud branch
- Telematics Reference Device
- Web App Manager maturity
- Speech re-factorization and Alexa Voice Agent
- Audio Policy Manager
- CAN message sending and J1939

# Happy Halibut

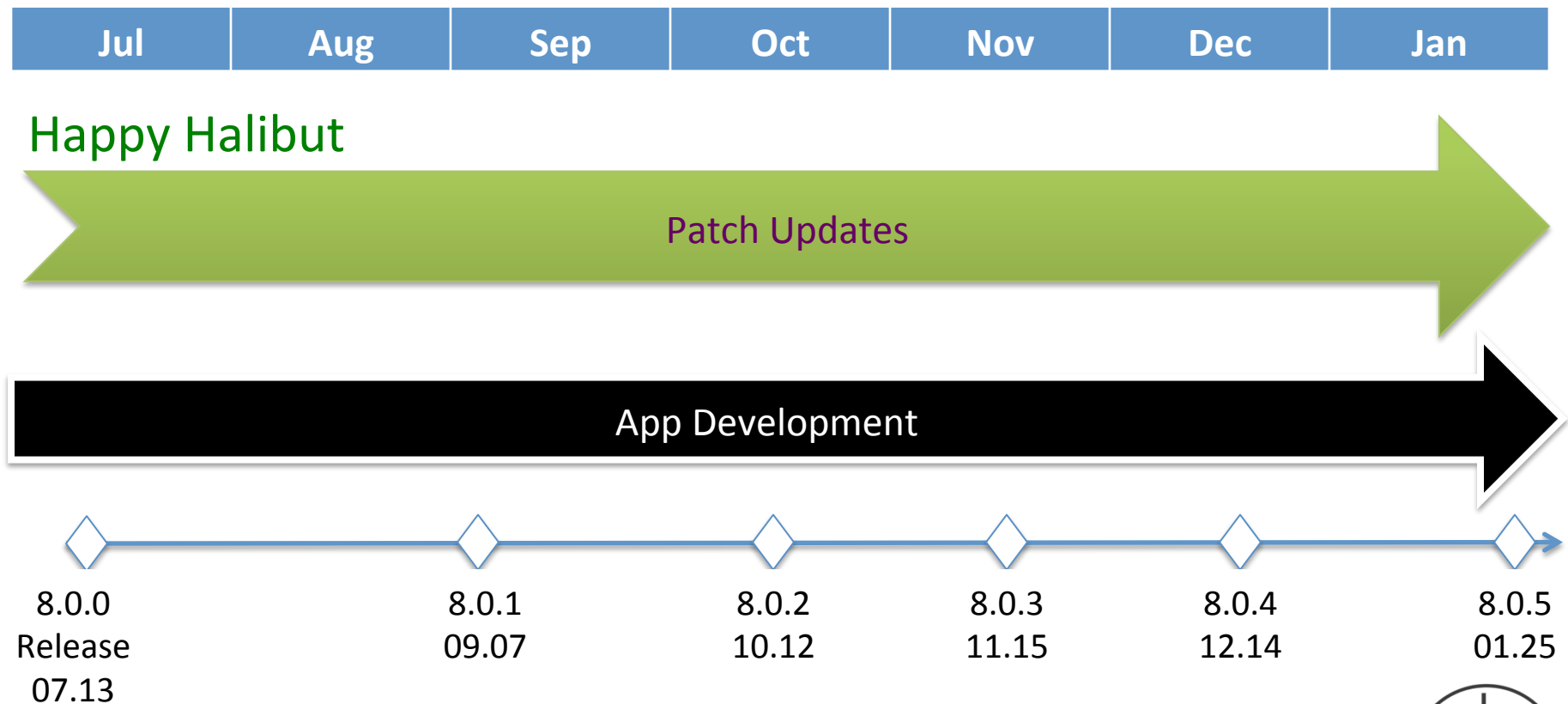


## Happy Halibut





# Happy Halibut Patch Releases



# ITCHY ICEFISH

---

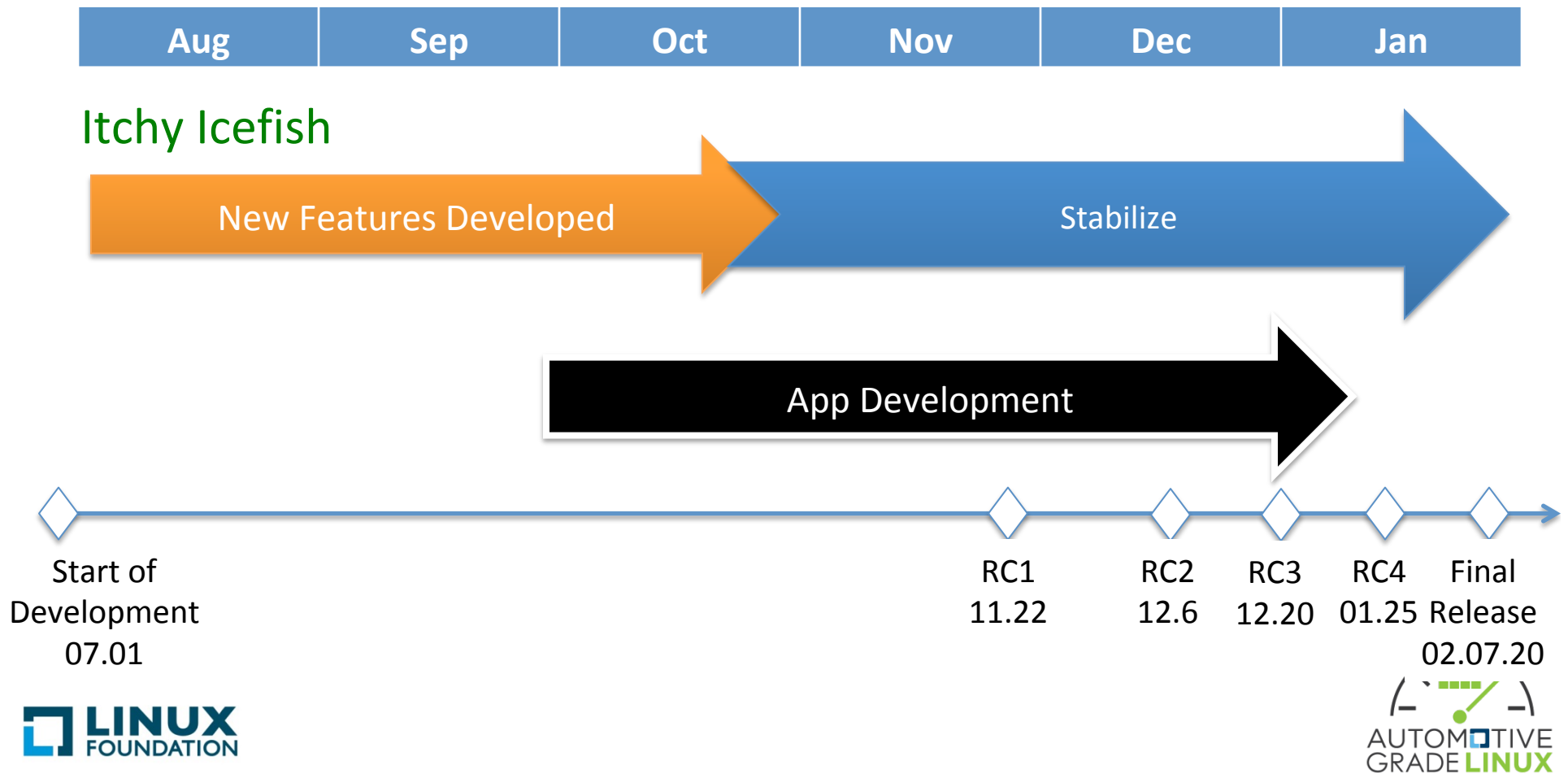


# Itchy Icefish

---

- Continue with Yocto 2.6 – Thud branch
  - Semis aligned on thud
  - Less churn at start of dev cycle
  - Focus on new features for CES rather than BSPs

# Itchy Icefish



# EXPERT GROUPS

---

# Active Expert Groups

---

- Application Framework and Security
- Connectivity
- Continuous Integration and Automated Test
- Graphics and UI
- Navigation
- Virtualization
- Reference Hardware System Architecture
- Speech
- Vehicle to Cloud
- Instrument Cluster
- Requirements Specification



# Speech EG Tasks

---

- Integrate Alexa with AGL system services such as HVAC
- Refactor Speech API binders based on lessons learned from CES integration
- Integrate with new open source Alex Voiceagent
- Multiple speech engine support

# App Framework Tasks

---

- Enable multi-user across the reference platform.
  - Widget installation per user
- Replace obsolete Tizen Security Manager
- Replace SMACK with Token logic required for HTML5 apps
- Security workflow for Device and App developers

# Graphics and UI Tasks

---

- Finish Waltham integration
- Investigate pipewire vs. 4a as audio solution
- 4a Policy engine
- Simpler 4a configuration and maintainability

# Connectivity Task List

---

- Signal composer stabilization and improvements
  - CAN HD
  - J1939
  - Improved messaging sending and filtering capabilities
  - Factory programming of CAN message set based on final vehicle configuration



# Connectivity Task List

---

- Telephony binder
  - Extend to hardwired telephone use case
- Telematics reference device and applications

# CIAT Task List

---

- More Tests!

# Instrument Cluster (New EG)

---

- Create profile for Cluster(HUD)
- Shrink and optimize AGL base as much as possible for low cost system.
- Possible use cases include motorcycles
- Functional Safety for Instrument Cluster

<https://wiki.automotivelinux.org/eg-ic>

# Requirements Spec EG

---

- Creating Requirements Specification 2.0
- Think Marketing Requirements Document (MRD) Not a compliance spec!
- Guidelines for deciding design policies for developers
- Priorities and criteria for developing AGL UCB

<https://wiki.automotivelinux.org/eg-requirements-specification>

# Navigation Task List

---

- AisinAW can no longer lead so EG will be mostly dormant in 2019 unless new leadership and interest is found

# V2C EG- Application Candidates

---

- Save Vehicle preferences from car to cloud
- User shares data with third party in exchange for discount or promotional offer
- Cloud-initiated Feature Activation
- CAN Data is encrypted, signed and stored in OEM Cloud
- Authenticate to third-party subscription service



# Q & A

# Q & A

---

- This is the segment where
  - You ask intelligent, well thought out questions
  - I ramble pointlessly and unintelligently
- And/Or
  - You ask “dumb” questions
  - I respond with concise, insightful, and well-reasoned answers





**THANK YOU**

