

How we think of Product Ready Profile For Virtual Workshop

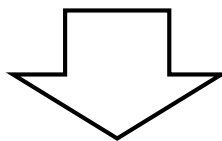
6.Oct.2020
TOYOTA MOTOR CORPORATION

- Let me explain the Product Ready topic today to make sure we are on the same page as Walt introduced in the agenda.
- We assume that the goal of this topic is to clarify the position of Product Ready.
- We will briefly talk about the background description of Product Ready activities so far.

Toyota suggested the following issues.

1. A big refactoring is required for introduction of product code to IVI-Profile.
2. OEM/Tier1 source codes are not adopted in AGL.
3. The number of activity lead by OEM/Tier1 is small.
4. There are no tests to keep quality assurance.

To solve the issues, we proposed to make **Product Ready profile**.



At special SAT, we discussed Product Ready profile to proceed the activity, but there're remaining questions and we agreed with AGL members to hold workshop to discuss them deeply.

We explain the topics below this time.

1. What's the definition of "Product Ready"?
2. What's the relationship between IVI-Profile and Product Ready profile?
3. If we have 2 profiles for IVI, it's not UCB. There are problems of investment and resources.
4. What will Product Ready profile be like in Dec 2021(1st Release)?
5. It's a concern that Product Ready profile becomes Frankenstein and maintainer for it doesn't exist.
6. When source codes are contributed, the contributor (and the related company) are happy, but others aren't always happy.
7. Application FW in Product Ready profile is different from current Application FW.

Answers are prepared for each on the following pages.

	Question	Answer
1	<p>What's the definition of "Product Ready"?</p> <p><u>Background:</u> TOYOTA proposed and started the activity to fill the gap between Product and AGL. At the beginning, TOYOTA explained the gap is the coverage of APIs.</p>	<p>We think "Product Ready" profile is a platform that OEM/Tier1 can use for their products as a way to develop products at low cost.</p> <ul style="list-style-type: none">· Test Code are fully implemented and the quality is assured· Product specific functions and requirements are satisfied
2	<p>What's the relationship between IVI-Profile and Product Ready Profile? If Product Ready Profile is for the actual product, what is IVI-Profile for?</p>	<p><u>IVI-Profile</u> It's UCB, and where the modern technologies can be tried. This profile can be used as Reference. Community maintains this profile. By the existence of Product Ready Profile, Requirements and Implementations (that OEM/Tier1 have) will become clear for IVI-Profile.</p> <p><u>Product Ready Profile</u> The platform where product-level IVI requirements and the implementation are disclosed. Legacy codes and product-specific requirements can be included. OEM/Tier1 will maintain this profile(TOYOTA will lead during Trial Period). By the existence of IVI-Profile, IVI-Profile can be the Reference especially when adopting new technologies to Product Ready Profile.</p>

Questions and Answers

	Question	Answer
3	<p>If we have 2 profiles for IVI, it's not UCB. The investment should be focused.</p> <p>It's a concern that Product Ready Profile is attractive, and resources will flow to Product Ready Profile (If there're two, people who want to do new activities are confused).</p>	<p>We think Product Ready Profile is the place to disclose product codes, and as an usual OSS, we should upstream codes (new technologies) to IVI-Profile.</p> <p>We think both "Feedbacks" from actual products (Product Ready Profile) and "New technologies" from IVI-Profile are necessary to lead the evolution of IVI.</p> <p>At least for near future, we have to collect OEM/Tier1 product codes as a first step, and Product Ready Profile won't consume a lot of OSS resources during this phase.</p> <p>If Product Ready Profile can attract developers, we think that is good for entire AGL community.</p>
4	<p>What will Product Ready Profile be like in Dec 2021 (1st Release)?</p>	<p>It depends on our internal development status, and can't assure specific schedules now. We'd like to share our current plan / milestones later.</p>

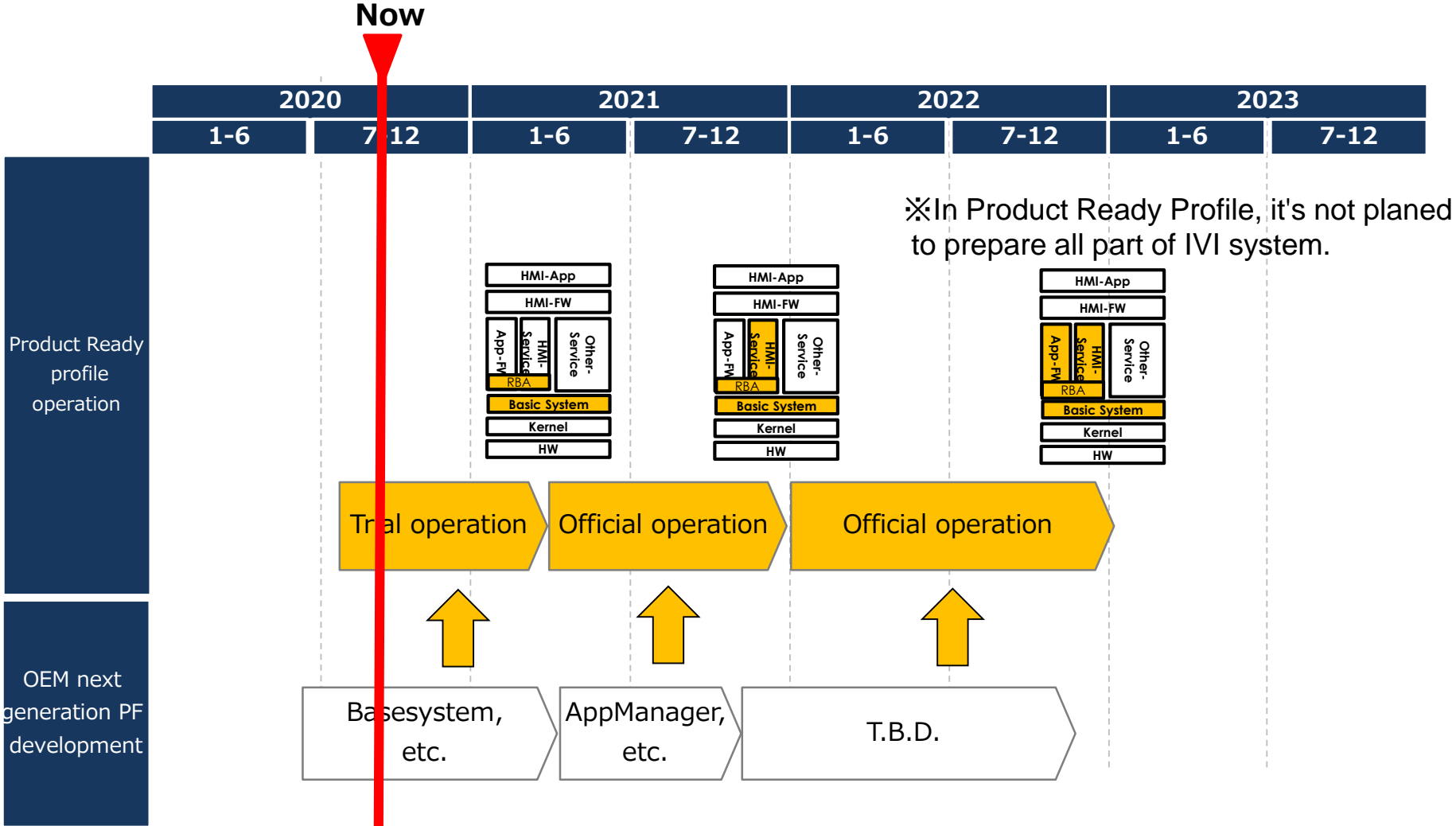
Questions and Answers

	Question	Answer
5	<p>It's a concern that Product Ready Profile becomes Frankenstein and maintainer for the profile doesn't exist.</p>	<p>Toyota will maintain the whole part of Product Ready Profile. We want OEM/Tier1 It's also an activity to activate OEM/Tier1's effort. We hope this will make OEM/Tier1's activities more active. (Assuming that if the activity itself is activated, the problem that the maintainer is absent will be solved.)</p>
6	<p>When source codes are contributed, the contributor (and the related company) are happy, but others aren't always happy. The implementation depends on the contributor's way and to maintain it by AGL is needed.</p>	<p>We understand implementation depends on each contributors. And we don't consider the source codes in Product Ready Profile will be used for product in each company. In thinking the gap with products, we think the costs will be lower than the current IVI-Profile.</p>

Questions and Answers

	Question	Answer
7	<p>AppFW in Product Ready Profile is different from current AppFW. Does that mean current code bases depending on AppFW can't be used?</p>	<p>Toyota doesn't have any plan to use current AppFW for our products, but we have to investigate the needs from other OEMs.</p> <p>If current AppFW and Toyota AppFW can coexist or can be selectable, that would be better. For some test purpose, we continue to use current AppFW.</p>

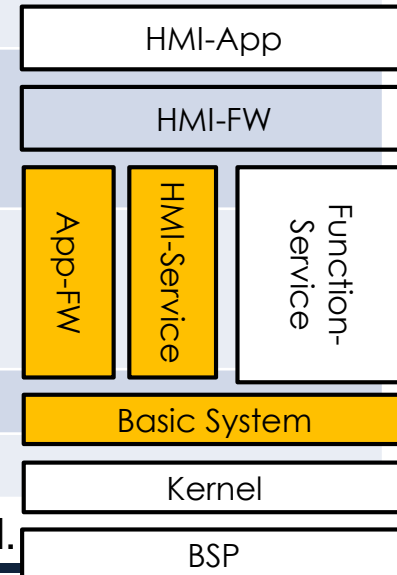
Product Ready Development Plan



Product Ready Profile Software Structure

This is a table to clarify which layer is targeted in Product Ready Profile.

Layer	What is expected to be available (from OEM point of view)	OEM Product Contribution
HMI-Apps	It depends on OEM specific so no product code is provided. Toyota will provide Test application for the platform evaluation.	No (Test App.)
HMI-FW	It depends on OEM specific so no product code is provided.	No
AppFW	Toyota will provide Product Code. (Including Application Manager)	Yes
HMI-Service	Toyota will provide Product Code (Including Car specific part. e.g. Driving regulation, pop-up)	Yes
Function-Service(e.g.wifi, audio, handsfree, etc.)	AGL code or Stub will be available for Test. (For the actual product, OEM usually use commercial product.)	No
Basic System(Error management, Resource management, etc)	Toyota will provide Product Code. (It ensures vehicle reliability.)	Yes
Kernel (Yocto)	AGL code	-
BSP	AGL code (Software from SoC Vendor)	-



◆ For the purpose of Demo and Test, IVI UCB codes will continue to be used.

- The position of IVI-Profile and Product Ready Profile
 - IVI-Profile : It's UCB, and where the modern technologies can be tried. This profile can be used as Reference. Community maintains this profile.
 - Product Ready Profile : The platform where product-level IVI requirements and the implementation are disclosed. OEM/Tier1 will maintain this profile.
- We make IVI-Profile and Product Ready Profile coexist.

- We would like to start development of Product Ready Profile in this way. Do you have any objection?

- For the two profiles, to cooperate with each other is needed.
 - To each OEM/Tier1 members, we would like you to contribute Product Code or propose Requirement Specification. We'll contact you individually.
 - To Walt and AGL members, we'll share the status at SAT.