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Mentor/Mentee Supervisor Explanation

Review Training Plan for New Engineers

Renesas Design Vietnam Co., Ltd.

Rev. 2.00

General Administration Division

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1. Newly improved points in this modification

1) **When beginning Mentor/Mentee program,**
   Decide targeted requirement of technical skill level
   **in a unified method:**

   a) Decide the Expected technical skill level
   b) Decide the Training Center curriculum course to be taken

2) **When finishing Mentor/Mentee program,**
   Evaluate performance of both Mentor and Mentee
   systematically:

   a) Evaluate performance of Mentor and Mentee
   b) Feed back result to Mentor and Mentee
   c) Use evaluation in appraisal and promotion

2. Background of the present situation

- **Nearly half is less than two year experience**
    - **Average working year is around 3 years. In case that the same resignation rate continues and we keep the current HC, this situation continues.**
    - **It is important to educate intensively in the first two years.**

- **The company continues to improve both OJT and OffJT. This time this material explains improvement of OJT (Mentor/Mentee). (For your reference, see Appendix for OffJT)**

Over 5 Years — 26.1%
3 ~ 4 Years — 24.7%
1 ~ 2 Years — 15.0%
Under 1 Year — 34.2%
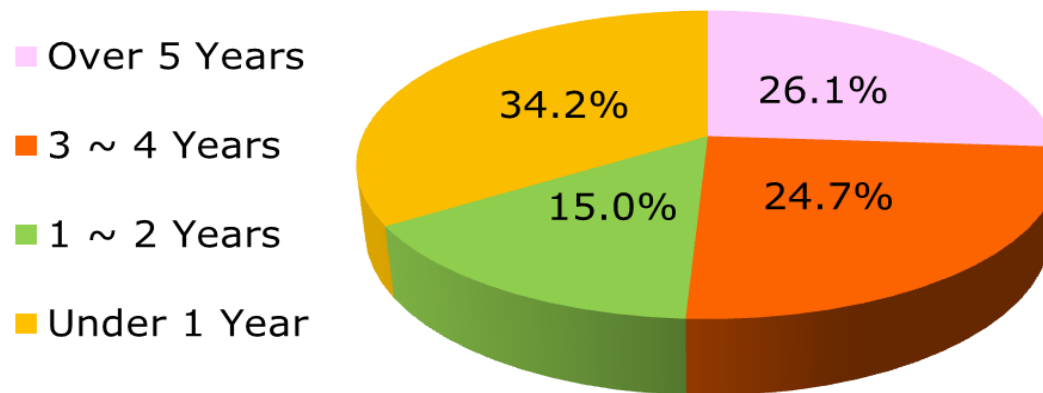
RVC HC by Working Year

3. Issue and Solution

1. At present each department is doing Mentor/Mentee independently. There is not a unified framework of this activity.

    -> HR organizes Mentor/Mentee with a unified framework.

2. At present we do not have clear and detailed requirement written regarding expected technical target after two years.

    -> Eng. Div. defines unified expected technical target for engineers.

3. At present systematic execution is not enough in OJT (Mentor/Mentee).

    -> HR sets procedure of Mentor/Mentee more systematically
     (e.g. relating to evaluation, TC training)

4. Definition of targeted engineer by Engineering Division

Experience	Over all Image of Character	Technical Ability	Management Ability	Communication Ability	TOEIC
1 Year Later	Can do basic work under supervisor's instruction	It should be defined by Department as following pages	Can keep assigned schedule	Can report his problem to supervisor	-
2 Year Later	Can do feedback by looking at result of work		Can keep schedule and raise alarm if necessary	Can report work status in his team	-
3 Year Later	Can instruct younger engineers in his responsible segment		Can estimate schedule, and can make action to keep schedule	Can report problem in group, and can negotiate with group member	650

5.1 Expected Level of engineers Hardware (1/2: FE)

2-Year old engineers are expected to obtain skills below at level where he/she can complete task without help.

Minimum skill/role (Two years later)

Category	Frontend Design	
	Functional Design	**Functional Verification**
Execution of Design & Verification	to create RTL level functional description and module connection with HDL	to list verification items based on product specifications and chip specifications
	to describe timing constraints for chip and/or module levels	to create test patterns covering verification items using HDL and assertions
	to check RTL description using RTL checker and modify if errors are found	to conduct verification by using logic simulator with test patterns, judge results and modify input data if necessary
	to conduct synthesis with associated tool and retry synthesis with alteration of synthesis options and/or modification of RTL/SDC to meet specified criteria	to conduct verification coverage collection
Evaluation of Design & Verification result	to check assignment proceeds as scheduled	to check assignment proceeds as scheduled
	to check design met given specification and modify it if necessary	to judge verification items are covered by test cases and evaluate coverage result
	to summarize design information and constraints and provide them to DFT and layout designer	to summarize verification results and report

Remarks : Individual targeted skill should be defined by Mentor/Mentee and MBO

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5.2 Expected Level of engineers Hardware (2/2: BE)

2-Year old engineers are expected to obtain skills below at level where he/she can complete task without help.

Category	Backend Design	
	Layout Design & STA	**DFT**
Execution of Design & Verification	to create floor-plan considering signal timing, chip size, wiring density, power constraints and hard-macro constraints	to insert Mux SCAN chain, logic BIST, memory BIST, boundary and IDDQ test scan into netlist with associated tool
	to determine bonding PAD allocations on LSI die conforming to bonding rules	to check logic equivalence between before and after of DFT insertion with associated tool and provide feedback if necessary
	to create chip layout based including power/ground network, CTS, Place & Route, considering timing and signal integrity	to create test patterns for SCAN and functional tests with associated tool and provide feedback if failure detection rate does not meet criteria
	to carry out signal routing improvement according to STA output	to create patterns for defective memory replacement and conduct verifying memory rescue patterns
Evaluation of Design & Verification result	to check assignment proceeds as scheduled	to check assignment proceeds as scheduled
	to verify if the chip-implementation conforms to the guidelines and specifications	to verify design and tests are met to test strategy of product
	to summarize layout results and report	to summarize DFT results and report

Remarks : Individual targeted skill should be defined by Mentor/Mentee and MBO

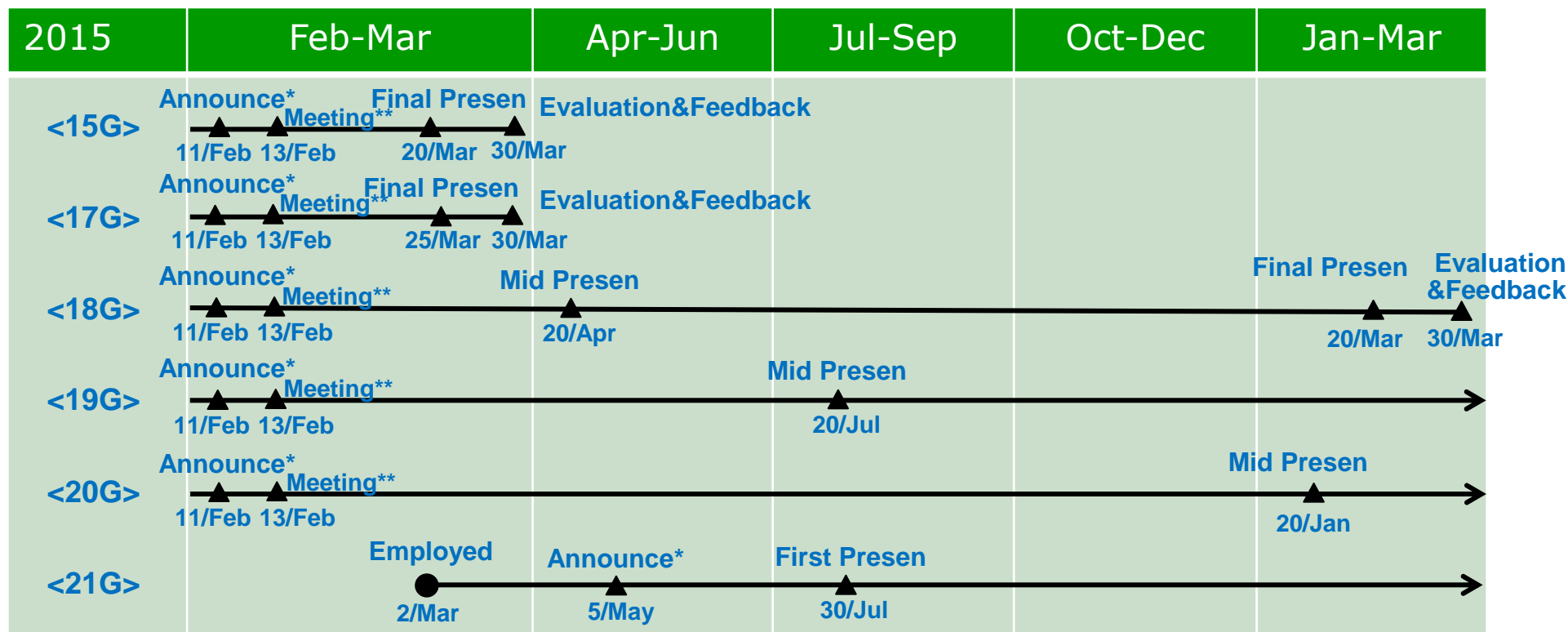# 5.3 Expected Level of engineers Software

Skill / Role	Verification /Failure analysis	Programming	MCU architecture	Operating System	Development Process	QC in software	Project Management
Software design engineer (Function/ Detail spec) role level 2	Can do feedback by looking at result of work	Can do feedback by looking at result of work	Can understand architecture of objective MCU of assigned product	Can understand objective OS of assigned product	Can do feedback by looking at result of work	Can do basic work under supervisor's instruction	Can do basic work under supervisor's instruction
Coding engineer (Software) role level 2	Can do feedback by looking at result of work	Can do feedback by looking at result of work	Can understand architecture of objective MCU of assigned product	Can understand objective OS of assigned product	Can do feedback by looking at result of work	—	—
Verification /System testing engineer role level 2	Can do feedback by looking at result of work	—	Can understand architecture of objective MCU of assigned product	Can understand objective OS of assigned product	Can do feedback by looking at result of work	—	—

Remarks : Individual targeted skill should be defined by Mentor/Mentee and MBO

6. Countermeasure : OJT

#	Direction	Current issue	Countermeasure
1	One unified standard should be made	The current OJT: Mentor Mentee System is done by each department separately	To be organized by HR and make unified standard of expected skill level of targeted engineer
2	The result of Mentor Mentee system should be evaluated systematically	There is not system to evaluate result of Mentor Mentee	To evaluate result by the unified standard, and the result should be used for appraisal and promotion for both mentor and mentee
3	Define necessary training and check whether Mentee received enough training	Training plan and result is not shared by Mentor, Mentee, and supervisor	Decide schedule of training to attend at the beginning of Mentor/Mentee period, and Mentee should share result.

7. Improvement Plan Schedule   OJT

2015	Feb-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar

<15G>
Announce* — Meeting** — Final Presen — Evaluation&Feedback
11/Feb 13/Feb 20/Mar 30/Mar

<17G>
Announce* — Meeting** — Final Presen — Evaluation&Feedback
11/Feb 13/Feb 25/Mar 30/Mar

<18G>
Announce* — Meeting** — Mid Presen — Final Presen — Evaluation&Feedback
11/Feb 13/Feb 20/Apr 20/Mar 30/Mar

<19G>
Announce* — Meeting** — Mid Presen
11/Feb 13/Feb 20/Jul

<20G>
Announce* — Meeting** — Mid Presen
11/Feb 13/Feb 20/Jan

<21G>
Employed — Announce* — First Presen
2/Mar 5/May 30/Jul

* 11/Feb: Announce: Provide the document of this new procedure. The document explains detail steps
       to proceed this new method by generation. The document is completed 10th February.
** 13/Feb: Meeting: Explain the document about detail steps to Gr.Mgr.
About 15G & 17G, period was over, therefore they give presentation based on original target.
18G onwards, new target is reset based on the new expected level.

< Standard Cycle Schedule >

Employed — Start Mentor/Mentee First Presentation — Mid term Presentation — Finish Mentor/Mentee — Final Presentation — Evaluation &Feedback
M1 Training M2 M4 M16 M26 M28 M28 (←Month)

7. Schedule : (continue) Presentation

1. First Presentation
   (1) HR announces start of Mentor/Mentee after the group assignment.
   (2) Eng. Div. decides assignment of Mentor.
   (3) Mentor/Mentee decides target and training center curriculum.
   (4) Mentor register target and curriculum in common record.
   (5) HR organizes the presentation and Mentee gives presentation.

2. Mid term Presentation
   (1) HR announces the mid term presentation.
   (2) HR organizes the presentation and Mentee gives presentation.

3. Final Presentation
   (1) HR announces the final presentation.
   (2) HR organizes the presentation and Mentee gives presentation.
   (3) Manager evaluates performance of Mentor and Mentee.
   (4) Manager gives feedback to Mentor and Mentee.

(Note: Standard time duration of presentation is 10 min. for presentation and 5 min. for Q&A. However, it can be altered depending on number of Mentees.)

7. Schedule : (continue) Case for each Generation

(1)15G and 17G:

Please do final presentation based on original target (as their period is over).

Also evaluate result of Mentor/Mentee, and provide feedback to Mentor and Mentee.

(2) 18G, 19G and 20G:

Please set the target according to the new expected level.

Also decide curriculum to be taken in Training Center.

Then give the mid term presentation based on the target.

(3) 21G:

Please set the target according to the new expected level.

Also decide curriculum to be taken in Training Center.

Then give the first presentation based on the target.

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7. Schedule: (continue) Evaluation method

< Evaluation Format >

- First line manager of Mentor evaluates and Department manager examines the result.
- Evaluation point is described in the same way as appraisal (1=Outstand <-> 5=Need to improve: by absolute evaluation, not relative evaluation)

No.	Dept.	Grp.	Position	Name	Target	Evaluation item & point						Training	Evaluator's Comment
						A	B	C	D	E	Overall		
1	FED	IP1	Mentee	Mr. A		2	3	4	2	3	3		
			Mentor	Mr. B		3	4	3	--	--	3		

Position		Evaluation item	Criteria to evaluate
Mentee	A	Technical skill	Acquired designated technical skill, knowledge required by the standard definition of mentee to perform the expected job level.
	B	Communication ability and team work	Acquired proper communication skill to report to supervisor for feed back and alarm for problem solving, and have team work attitude for cooperation with colleagues.
	C	Motivation	Maintained high motivation with commitment to achieve mission and keen enthusiasm for challenging spirit for better result.
	D	Customer satisfaction	Maintained attitude to mind customer satisfaction and improvement of quality of work and productivity
	E	Education and Training	Attended designated training curriculum and performed qualification in result of training to obtain knowledge.
Mentor	A	Communication	Mainained enough frequent opportunity of contact and monitoerd situation of mentee's progress regularly and carefully.
	B	Coaching	Whether listened sincerely issues of mentee and provided proper suggestion timely to let him discover solution by himself.
	C	Technical development	Whether provide enough and timely technical advice and monitor progress of mentee's technical improvement.

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Appendix 1. Countermeasure :Technical Training

#	Category	Direction	Current issue	Countermeasure
1	Hardware Training	Master basic skill of assigned segment -> Understand design flow, Teach younger engineers	Educate basic portion in the initial training and the technical training, however after that training is depends on OJT. Engineers do not understand much about design flow.	Strengthen the technical training by cooperating with the outside (EDA vender) -Both for new engineer and Mentor -In FY15/2H, it will be organized by RVC member -One for new engineers will be connected with the initial training)
2	Software Training		Systematic training curriculum has not been structured in the initial training or the technical training which are necessary for software engineers.	Structure a systematic training curriculum for software engineers -Initial training for new comer -Basic and middle class technical training for one or two year experience by surveying outside organization

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Appendix 2. Countermeasure :Soft Skill, Management

#	Category	Direction	Current issue	Countermeasure
1	Hardware	Make engineer who can not only manage himself but also cooperate with others	We have some training in the initial training, and after that, training depends on working place assigned. Ability of Mentor class is not enough	Increase curriculum of the Training Center and make systematic training course (not only for new engineer but also for Mentor class) for HW and SW
2	Software		We do not have enough number of capable engineers who can educate junior engineers well	Survey and utilize outside training organization for SW

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Appendix 3. Improvement Plan Schedule   Hardware

2015	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Strengthen the Technical Training by cooperation with EDA vender **-Basic Training of main EDA tools for new comer** **-Case Study base Advanced Training**	**<Basic Training>** **For 19G & 20G** **13/Feb** **<Advanced Training>** **Design Implementation** **27/March**	**For 21G** **30/May** **Functional Verification** **1/May**		**For 22G** **30/Nov**
Increase curriculum of the Training Center **·Improve common work skill training**	**Reporting & Planning – BE** **29/Jan** **PM Introduction** **12/Feb**	**Training of 21G** **4/May** **Work at company – 20G** **11/Jun** **Meeting** **15/April** **PM Introduction – 21G** **26/Jun** **Advanced PM Training for GrpMgr** **30/May**	**Reporting & Planning** **13/Aug**	**Work at company – 21G** **10/Dec** **PM Introduction – 22G** **25/Dec**

Appendix 4. Improvement Plan Schedule   Software

2015	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec

Structure a systematic training curriculum for software engineers

Review over all Software training system
27/Feb

Analyze 21G's training (find issue & countermeasure)
8/May

Create improvement plan for 22G
29/May

-**Initial training for new comer**

Make training material for 22G
28/Aug

Start 22G New Training
1/Sep

-**Basic and middle class technical training for one or two year experience**

Analyze curriculum of information engineering in university
8/May

Create training material for Basic (3 basic courses)
25/Dec

Start Basic course
1/Jan

Utilize outside training organization

Survey outside training organization
28/Aug

Start outside training
1/Oct