IEEE P1685 Working Group

Meeting Minutes  
9 December 2021 / 10:00 AM – 11:30 AM (EST)  
Teleconference (Teams Video Conference ID: 126 333 222)

1. Call to Order
   1. *Erwin de Kock, WG Chair, calls the meeting to order at 10:08 AM EST*
2. Roll Call and Disclosure of Affiliation

*Affiliation FAQs:* [*http://standards.ieee.org/faqs/affiliation.html*](http://standards.ieee.org/faqs/affiliation.html)

* 1. *John Blyler (Accellera, DR)  
     David Courtright (AMD, DR)  
     Edwin Dankert (ARM, DR)  
     Jean-Michel Fernandez (Arterix, DR)  
     Gregoire Avot (Arteris, DRA)  
     Benoit Lafrage (Arteris, DRA)  
     Vincent Thibaut(Arteris, DRA)  
     Eyal Herzberg (Cadence, DR)   
     Li Jun (Cloudwalk, DR)  
     Michael Velten (Infineon, DR)  
     Scott Venier (NVIDIA, DR)  
     Erwin de Kock (NXP, DR)  
     Richard Weber (Semifore, DR)   
     Thomas Burg (ST, DR)  
     Mark Noll (Synopsys, DR*

1. Approval of Agenda
   1. *Vincent Thibaut moves a motion to approve the agenda.  
      Mark Noll seconds the motion.  
      Erwin de Kock (WGC) asks if anyone objects to unanimous consent of the motion.  
      No objection, hence, the agenda is approved.*
2. Approval of Previous Meeting Minutes
   1. [2021-10-28-minutes.docx](https://ieee-sa.imeetcentral.com/p1685/folder/WzIwLDEzNzk3NjAyXQ/WzIsODE0NjkzODhd/)  
      *Vincent Thibaut moves a motion to approve the minutes.  
      Mark Noll seconds the motion.  
      Erwin de Kock (WGC) asks if anyone objects to unanimous consent of the motion.  
      No objection, hence, the minutes are approved*
3. IEEE SA Patent & Copyright Policies  
   Call for Patents <https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf>

Copyright <https://standards.ieee.org/ipr/copyright-materials.html>

1. *Erwin de Kock (WGC) made a call for potentially essential patents; no one raised concerns for consideration*
2. *The copyright policy was presented. There were no questions or concerns*
3. Unfinished Business/Action Item Review
   1. [Tracking of attendance and eligible voters](https://ieee-sa.imeetcentral.com/p1685/folder/WzIwLDEzNzEwMzA1XQ/WzIsNzQ1OTA1NjNd/)
      1. All 14 entity members have voting rights.
   2. Result of the formation of the Balloting Group
      1. Group is formed and closed. Need to start public review within 6 months.
   3. [MEC review comments](https://ieee-sa.imeetcentral.com/p1685/folder/WzIwLDEzNzk3Nzk1XQ/WzIsODE0MzY3Mzld/)
      1. John Blyler has made the recommended changes.
   4. Two meetings held in sub groups on Nov. 16 & 18 to discuss SystemVerilog comments
      1. Proposal to add Boolean attribute to interface element called phantom.
      2. Proposal to make subports, structPortTypedefs elements optional.
   5. Two meetings held in sub groups on Nov. 15 & 17 to discuss memory map / mode comments
      1. Propose to create more explanations of both options. David Courtright to expand option 1 and Erwin de Kock to expand option 2.
   6. [Comment 50](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwMzkyNTZd/w-Comment50DefaultValueForPort) Default value for port
      1. Erwin de Kock proposed to add table to annex section C.30
4. Technical Presentation(s), Contribution(s) or Discussion(s)
   1. Recommendation from SystemVerilog sub group  
      1. To add a Boolean attribute named phantom to the interface element.   
      2. To make the subPorts element and the structPortTypeDefs element optional.  
        
      [Comment 39](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwMjU1OThd/w-Comment39PhysicalPortRestrictions) Physical port restrictions

[Comment 40](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwMjYzNDVd/w-Comment40HierachicalSVInterfaceAndIsIO) Hierachical SV interface and isIO

[Comment 45](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwMzE0ODZd/w-Comment45VerilogToSystemVerilogConnection) Verilog To SystemVerilog connection

[Comment 46](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwMzE3Njld/w-Comment46IsIOPortReferenceIgnoreModport) isIO port reference ignore modport

[Comment 47](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwMzU0ODFd/w-Comment47ConsecutiveBitsSelectionAndArrayOfSvInterface) Consecutive bits selection and Array of SvInterface

* 1. Discussion in memory map / mode sub group  
     The WG needs to decide / clarify how modes and memory maps relate because different members have different interpretations.  
       
     **Interpretation 1.** A register transaction can “see” different modes in the path towards the registers, e.g., modeA in the address block and modeB in the register. Implications of that are:
     1. Existing SCRs need to be removed.
     2. A field access value needs to be computed by combining the access values of the elements on the path towards that field (addressBlock 🡪 registerFiles 🡪 register 🡪 field).
     3. To define unique paths for a set of active modes, the modeRef priority values need to be unique with the scope of accessPolicies, fieldAccessPolicies, and accessRestrictions elements. In the current schema, the scope is accessPolicy, fieldAccessPolicy, and accessRestriction.

**Interpretation 2.** A register transaction can “see” only 1 mode in the path towards the registers (addressBlock 🡪 registerFiles 🡪 register 🡪 field). Note that the “single” mode concept does not apply to memoryRemap, alternateRegister, and remapAddress modes. Implications of that are:

* + - Existing SCRs need to be kept.
    - A field access value is described by the fieldAccessPolicy/access element value.
    - To define unique paths for a set of active modes, the modeRef priority values need to be unique within the scope of addressBlock/accessPolicies. In the current schema, the scope is addressBlock/accessPolicies/accessPolicy. The modeRef priority attribute in registerFile, register, field, and accessRestriction can be removed or it should be made clear what they mean. For now, it is assumed that they are removed.
  + Due to time constraints the following discussions are deferred.

[Comment 56](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwNDQ1OTJd/w-Comment5661312MemoryRemapmodeRef) 6.13.1.2 memoryRemap.modeRef

[Comment 57](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwNDQ2MTJd/w-Comment5761442cAlternateRegistermodeRefIsUnclear) 6.14.4.2.c alternateRegister.modeRef is unclear

[Comment 59](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwNDQ2MzVd/w-Comment59C22AccessPolicies) C.2.2 accessPolicies

[Comment 82](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE0NTA3MjJd/w-Comment82ModeInRemapAddressIsNotConsistentWithGlobalModeManagement) mode in remapAddress is not consistent with global mode management

[Comment 84](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE0ODI1Mzhd/w-Comment84APriorityAttributeCouldBeAddedToFieldMapModeRef) a priority attribute could be added to fieldMap modeRef

* 1. Discuss other [WG comments](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsNzc3NzA5MDFd/w-ReviewCommentsOnAccelleraIPXACTWGContribution) on [draft](https://ieee-sa.imeetcentral.com/p1685/folder/WzIwLDEzNzk3Nzk1XQ/WzIsODEwMzM4NTdd/) (PDF) submitted for MEC review

[Comment 61](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwNDQ4MTVd/w-Comment61NoUnitAttributesInSingleShotDriver) No unit attributes in singleShotDriver.

[Comment 62](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEwNTY1MTFd/w-Comment62NamespaceInAttributeResolve) Namespace in attribute resolve

[Comment 64](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEzNzQ2Njdd/w-Comment64AFieldWithFieldDefinitionRefCannotBeAnAlias) A field with fieldDefinitionRef cannot be an alias

[Comment 65](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODEzNzQ4Njld/w-Comment65NetlistingRules) Netlisting rules

[Comment 67](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE0MTk1MDZd/w-Comment67UpdateTGIToSupportDefaultValues) Update TGI to support default values

[Comment 86](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE0ODI3MDZd/w-Comment86SCR724And725NeedExamples) SCR 7.24 and 7.25 need examples

[Comment 89](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE0OTI1NTNd/w-Comment89TypeIdentifierIsUselessInTypeDefinitions) typeIdentifier is useless in type definitions

[Comment 92](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1MDAyNDBd/?&pgref=) Update addressing equation (13)

[Comment 93](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1MDUyNzFd/w-Comment93NewSCRToCheckConsistencyOfAccessHandleSlicesSize) New SCR to check consistency of accessHandle slices size

[Comment 94](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1MDE3NzVd) SCR 7.13 clarification (typeIdentifier registerDefinitionGroup/alternateDefinitionGroup)

[Comment 98](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1MzE5MTFd/w-Comment98ReadResponseHasAmbiguousDescriptions) readResponse has ambiguous descriptions

[Comment 99](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1NDI5NjVd/w-Comment99StructPortTypeDefIncorrectReference) StructPortTypeDef: incorrect reference

[Comment 100](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1NDMwMDRd/w-Comment100TypoMissingPortDriverInElementsForViewRefC28) Typo: Missing Port Driver in elements for viewRef C.28

[Comment 101](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1NDMzMDVd/w-Comment101UselessDescriptionForSubPort) Useless description for subPort

[Comment 102](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1NDM1NTRd/w-Comment102WhyLastSubportInPortReferenceIsAWire) Why last subport in port reference is a wire ?

[Comment 103](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1NDY3MjZd/w-Comment103StructuredPortReference) Structured port reference

[Comment 104](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1NTIzMDhd/w-Comment104AlternateRegisterInAccessPolicyDescrip) alternateRegister in accessPolicy description

[Comment 105](https://ieee-sa.imeetcentral.com/p1685/doc/WzIsODE1NjI1NThd/w-Comment105CleanupTGICallsAccessingReferences) Cleanup TGI calls accessing References --- OPEN

1. New Business
   1. *No new business was stated*
2. Future Meetings
   1. Jan. 6 & 20, 10:00-11:30 AM EST
   2. Feb. 3 & 17, 10:00-11:30 AM EST
3. Second Roll Call
4. *John Blyler (Accellera, DR)  
   David Courtright (AMD, DR)  
   Edwin Dankert (ARM, DR)  
   Jean-Michel Fernandez (Arterix, DR)  
   Gregoire Avot (Arteris, DRA)  
   Benoit Lafrage (Arteris, DRA)  
   Vincent Thibaut(Arteris, DRA)  
   Eyal Herzberg (Cadence, DR)   
   Li Jun (Cloudwalk, DR)  
   Michael Velten (Infineon, DR)  
   Scott Venier (NVIDIA, DR)  
   Erwin de Kock (NXP, DR)  
   Richard Weber (Semifore, DR)   
   Thomas Burg (ST, DR)  
   Mark Noll (Synopsys, DR)*
5. Adjourn
   1. *Scott Vernier moves to adjourn.  
      Erwin de Kock, WG Chair adjourned the meeting at 11:31 AM EST.*
   2. *Minutes Posted Richard Weber, WG Secretary.*