Understanding Dynamic Architectures of Next Generation CUBESAT Designs – A Simple Technical Note on Space Technology R&D.

[Exploring Signals & Image Processing Algorithms for Space based Imaging Using HOL + JVM + Scala + Java + AI]

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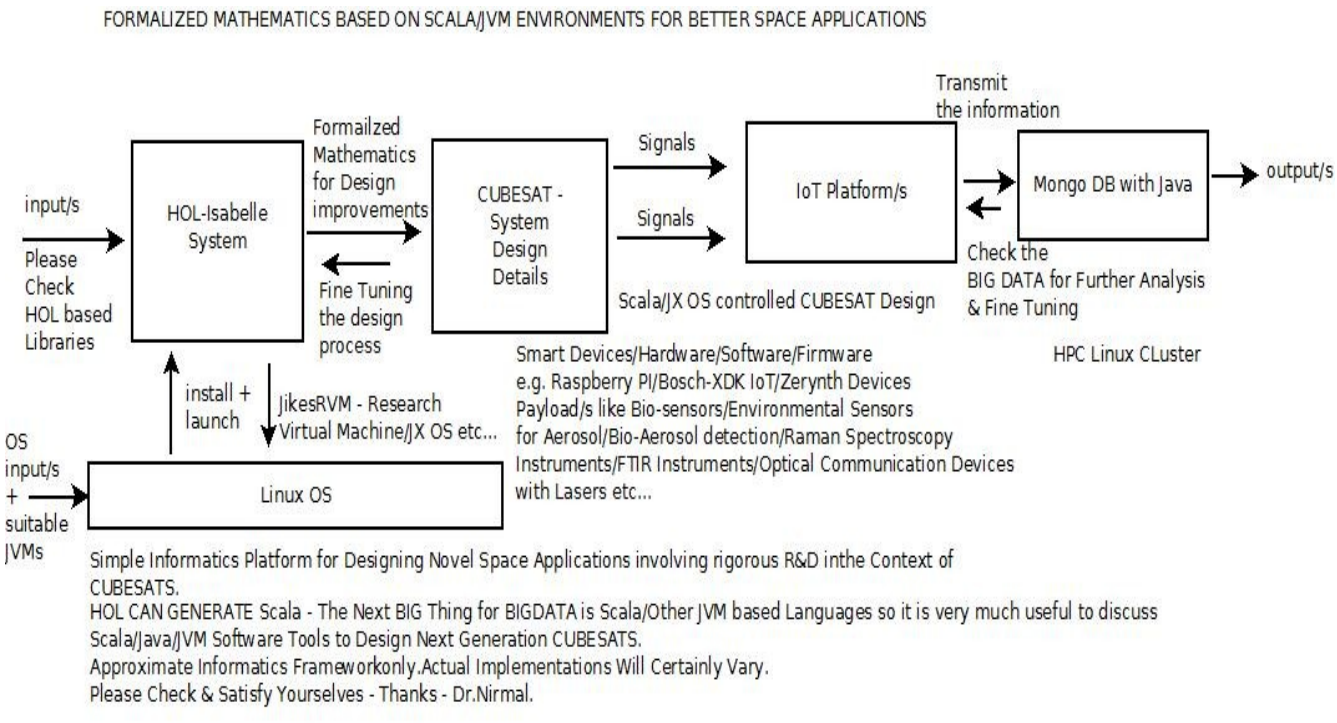
[I] Abstract/Inspiration/Introduction :

HOL-Isabelle-JVM-Scala-Java-AI based Probing of Systems/Sub-systems towards Next Generation CUBESATs.

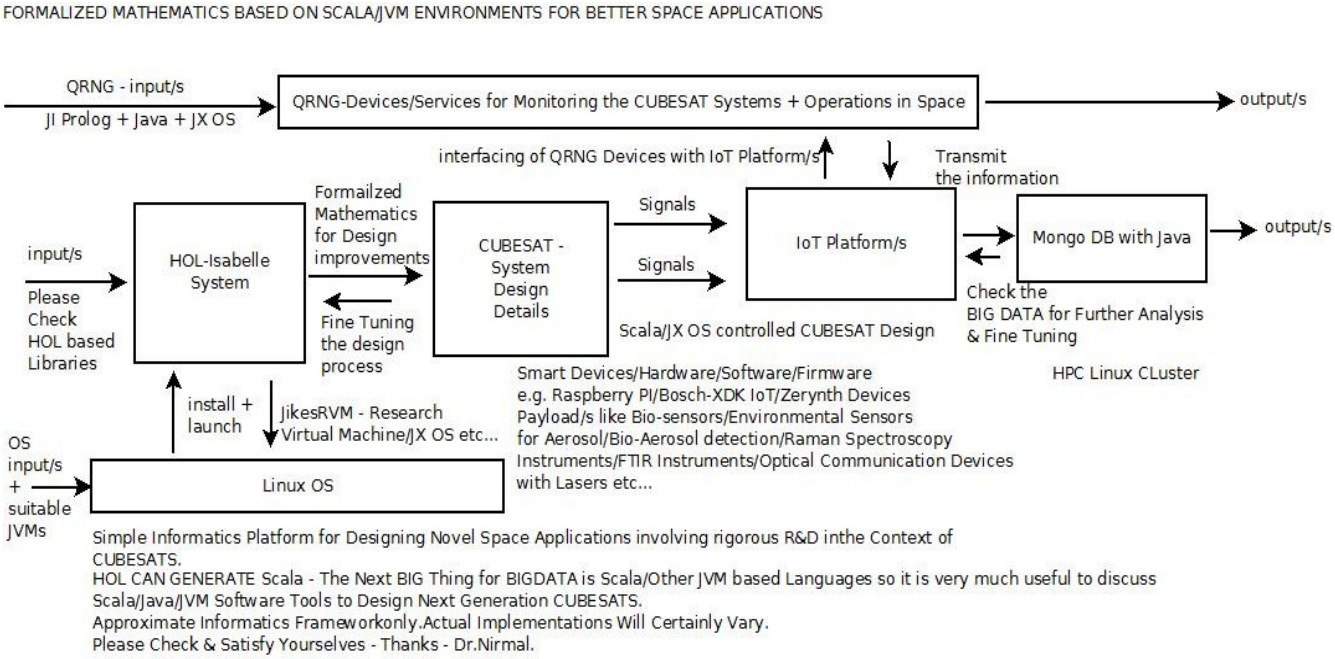
index words/keywords : keep guessing.

[II] Informatics Framework for R&D Using HOL-Isabelle/Scala/Java/JVM Software :



[Figure I – Algorithm I – Novel Design Paradigm for Next Generation CUBESAT System With HOL/Scala/Java/JVM/JX OS]

** Please Make a Note : We are only focusing on Electronics/Computing/Software/Theorem Provers/Mathematics.



[Figure II – Algorithm II – Novel Design Paradigm for Next Generation CUBESAT System With HOL/Scala/Java/JVM/QRNG/JI PROLOG/JX OS]

[III] Conclusion/s With Future Perspectives :

A Novel Method is Presented & Suggested.Hope more technical papers will follow.One of the pioneering R&D Efforts Using Hardware/Smart Devices/IoT/Software/Firmware/Mathematics based on Scala/Java/JVM/JikesRVM/JX OS Computing Environment/s.

[IV] Important References :

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[b] https://dzone.com/articles/scala-iot-first-basic-iot-application-using-scala-2

[c] https://blog.knoldus.com/iot-introduction-to-internet-of-things/

[d] https://blog.knoldus.com/iot-what-is-mqtt-how-it-is-lightweight/

[e] https://blog.knoldus.com/2016/08/28/scala-iot-getting-started-with-raspberrypi-without-monitor-or-screen/

[f] https://www.isa-afp.org/entries/VeriComp.html – HOL-Isabelle System.
[g] https://www.isa-afp.org/entries/Hybrid_Systems_VCs.html – HOL.
[h] https://www.isa-afp.org/entries/Minsky_Machines.html – HOL.
[i] https://en.wikipedia.org/wiki/CubeSat*

[i] https://www.isa-afp.org/entries/Architectural_Design_Patterns.html - HOL.
[j] https://www.isa-afp.org/entries/DynamicArchitectures.html -HOL.

[k] https://www.isa-afp.org/entries/Deep_Learning.html – HOL.
[l] https://www.isa-afp.org/entries/Groebner_Bases.html – HOL.
[m] https://www.isa-afp.org/entries/CAVA_Automata.html – HOL.

[n] https://www.isa-afp.org/entries/Algebraic_VCs.html – HOL.
[o] https://www.isa-afp.org/entries/FinFun.html – HOL.
[p] https://www.isa-afp.org/entries/Presburger-Automata.html – HOL.

[V] Useful Information on Scala/Related Tools :

[a] https://www.scala-lang.org
[b] https://scala-lms.github.io

[c] https://acl.inf.ethz.ch/research/SpiralS/
[d] https://scala-labs.github.io/index.html
[e] https://github.com/sterglee/scalalab – a MATLAB like Environment.

[f] www.jikesrvm.org – JikesRVM – Research Virtual Machine.
[g] https://github.com/lihaoyi/Metascala – Scala based JVM.

[h] https://acl.inf.ethz.ch/publications/ -Some Important Publications.

[i] https://medium.com/activewizards-machine-learning-company/top-15-scala-libraries-for-data-science-in-2018-4b2cb5c5367e && https://pathmind.com/wiki/scala-ai

[j] https://github.com/intel-analytics/BigDL – INTEL CORP.
[k] https://akka.io → Useful to write Java/Scala Programs/JVM.

[l] https://developer.lightbend.com/guides/akka-quickstart-scala/
[m] https://developer.lightbend.com/guides/akka-quickstart-java/

[n] *www.jiprolog.com* – JI Prolog.- A Prolog interpreter, pure Java 100%, cross-platform and Open Source.

[o] **Our direct or in-direct Technical Short Notes (((via))) Vixra.org** :

[i] http://www.vixra.org/author/nirmal
[ii] http://www.vixra.org/author/d_n_t_kumar

[iii] http://www.vixra.org/author/n_t_kumar
[iv] http://www.vixra.org/author/nirmal_tej_kumar

[p] https://www4.cs.fau.de/Projects/JX/publications/jx-usenix-slides.pdf - **JX OS Erlangen Germany**.

[VI] Conclusion/s With Future Perspectives :

Something Novel is suggested here in the context of Next Generation CUBESAT Designs Using :

Scala/JVM/IoT/Hardware/Smart Devices-Raspberry PI/Software/Firmware/HPC/BIG DATA/Applied Mathematics/HOL- Isabelle Theorem Prover → to probe Advanced Signal Processing/Image Processing Algorithms + Implementations. JVM Languages hold lot of promise in the IoT Revolution hence this simple & interesting suggestion.To the best of our knowledge,this Short Technical Notes is one of the pioneering efforts in Space Tech R&D Domains.

[VII] Acknowledgment/s :

Thanks to all my mentors+friends+collaborators. Non-Profit R&D.

[THE END]