

STM32 Summit Tech Dive Q&As

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AI and machine learning capabilities

Q1: How can I do benchmarking using STM32Cube.AI or Edge AI solutions, and which kinds of microcontrollers are suitable for this?

A: Please see https://wiki.st.com/stm32mcu/wiki/AI:STM32Cube.AI_model_performances. You can also use Performance or Validation application, see <https://www.st.com/en/embedded-software/x-cube-ai.html> and relevant documentation.

Q2: What is the maximum model input for a yolov8n model in the new chip?

A: Please see https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/object_detection/yolov8n.

Q3: How many AI models can be run simultaneously on the device?

A: We have an example solution running 2 models.

Q4: What type of external memory would you recommend to use here, that would be suitable for AI applications?

A: Please refer to DK and NUCLEO board schematic: <https://www.st.com/en/evaluation-tools/stm32n6570-dk.html#cad-resources>, <https://www.st.com/en/evaluation-tools/nucleo-n657x0-q.html#cad-resources>.

Q5: Seems that for the moment there is no text-to-speech and speech-to-text on model-zoo, only "audio event detection". Do you plan to integrate such LLMs in the next weeks/months?

A: NPU architecture supports convolutional neural networks.

Q6: What type of data is supported in NPU? Does it have matrix as well as vector engines? If yes, what is the max size?

A: NPU focuses on convolutional networks hardware support however it is possible to input time series e.g. accelerometer data, input tensor: HEIGHT = 26 (number of samples), CHANNEL = 3 (number of axes). As conclusion since input tensor is a generic data structure, it is possible to use one size (axis) of the tensor and input vector.

Q7: What is the memory BW to NPU?

A: The NPU could run at 1GHz and access SRAM clocked at 900MHz via an AXI bus at 1 GHz.

Q8: STM32N6 is the first MCU with NPU based on Cortex-M55. May I have a general overview of the roadmap of ST on the edge AI?

A: We do and will continue to invest in providing state of the art AI solutions; the N6 is the first step, more things are coming but it's too soon to disclose at the moment. Stay tuned 🤖



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Q9: What inference engines does the software provide out of the box? Like support for PyTorch models inference?

A: STM32N6 Neural Processing Unit (NPU) compiler supports onnx, tflite and Keras models format.

Q10: Have you tried running any transformer architecture models on N6 to see if it is capable of as stretch test?

A: NPU architecture targets convolutional neural networks.

Q11: Is on-device learning available in the demos/examples?

A: No, on-device learning of convolutional neural network is not addressed by the STM32N6.

Q12: Do you provide examples for processing sounds?

A: Please see https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/audio_event_detection.

Q13: Is the program code available for AI DEMO?

A: Is the program code available for AI DEMO? Demos are available on request here: <https://www.st.com/en/development-tools/stm32n6-ai.html>. However complete source code may not be delivered for all.

Q14: What is the best way to get started with AI with ST products?

A: Hi Lars! For camera AI applications you can use our Developer Cloud in which you can select a model from our model zoo. In any case this question will be tackled tomorrow in the session dedicated to ecosystem with more detail.

Q15: Is Nanoedge AI Studio still supported by ST?

A: Yes we are working on new nice features that will be released on the next versions, so keep tuned.

Q16: Any chance to see any more data of STM32N6 vs MPU performance comparison?

A: Please see https://wiki.st.com/stm32mcu/wiki/AI:STM32Cube.AI_model_performances.

Q17: Can modelzoo be applied to other cortex-m products or is it vendor locked?

A: Model zoo is a repository of pretrained models to be converted to C code using STM32Cube.AI.

Q18: Can you describe more about the version of Yolo framework, used for the demo, was it mainstream v8, or else?

A: Please see section object_detection in model zoo repository https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/object_detection.

Q19: What architectures or models are supported?

A: STM32N6 Neural Processing Unit (NPU) supports convolutional neural networks (integer computations -> quantized models).

Q20: What is the workflow you are supporting for NN model onboarding?

A: You need to use STM32Cube.AI compiler to convert desktop model (onnx, tflite, keras) to optimized C code and then integrate within embedded project https://www.st.com/en/embedded-software/x-cube-ai.html?ecmp=tt41236_q1_link_oct2024.



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Q21: Can the NPU be used to help the graphics processing?

A: In fact the NPU could not be used for graphics processing. The NPU is really dedicated to AI convolution neural network inference.

Q22: Is the NPU a NPU created from scratch by ST or is it based on existing AI accelerator?

A: Yes it is, this is a ST NPU IP called Neural-ART capable of 600Gops.

Q23: What about audio applications such as denoising an audio flow? Do you have demo code for this kind of application?

A: I would propose to see model zoo GitHub repository <https://stm32ai.st.com/model-zoo/>.

Q24: Can I combine 2 or more models from the model zoo for my application?

A: Yes, please see <https://www.st.com/en/development-tools/stm32n6-ai.html#overview> and analyze e.g. n6-ai-hand-land example.

Q25: Are all the STM32 tools (Cube.AI, NanoEdgeAI) free of charge?

A: Yes all the tools seen are free of charge.

Q26: Is it possible to get the model definition for all models in model zoo and other examples?

A: I propose to refer to relevant README.md file in model zoo e.g.

https://github.com/STMicroelectronics/stm32ai-modelzoo/blob/main/object_detection/yolov8n/README.md.

Q27: Can we do re-training on the device?

A: STM32N6 expects pretrained model and if you would like to perform learning on the device, NanoEdge AI Studio is more relevant (Anomaly Detection use case) however main target of NEAI Studio is to perform predictions of time series.

Q28: Can we use the HAR model from model zoo, on evaluation boards such as B-WL5M-SUBG1?

A: It depends on expected resources after compilation of the model, I would propose to use STM32Cube.AI to analyze the model selecting given target MCU.

Q29: In the human recognition section of model zoo there is a gmp folder and an ign folder, but can't see any information on what to do with these or which one to use for what reason.

A: Please see relevant README.MD file https://github.com/STMicroelectronics/stm32ai-modelzoo/blob/main/human_activity_recognition/gmp/README.md.

Q30: Can you encrypt the weights of the NN?

A: Since they are stored in external flash you can use the on-the-fly encoding/decoding IP (MCE).

Q31: Did you test other Human Pose Estimation algorithms?

A: Please see https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/pose_estimation.

Q32: Do you provide tools for model Quantization & Pruning?

A: We provide guidelines for quantization and pruning is one of the optimization techniques included in the tool that compiles a model for a microcontroller.



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Q33: I guess it's possible to import models from Hugging Face. If yes, can you provide a link to a manual on how to proceed?

A: STM32Cube.AI is a compiler to convert onnx, tflite or keras format to STM32 optimized C code, please see UM2526 for details <https://www.st.com/en/embedded-software/x-cube-ai.html#documentation> and also refer to Documentation folder of X-Cube-AI repository.

Q34: Is it mandatory to quantize the model to int8 to run on the STM32N6? If the answer is yes, then does it need to be done by the ST tools or needs to be done prior to using ST tools?

A: Quantization must be performed prior to using ST tools but ST provides guidance to do so, see X-CUBE-AI documentation.

Q35: Can we get an estimate of the power used by the model?

A: We will be publishing soon benchmarks and also an x-cube package to run a full power estimation on STM32N6 discovery board hardware. To give you an average number, YOLO V8 24.7tps NPU@1GHz and CPU @800MHz power= 320mW.

Q36: This micro-controller detects the movements of humans and humans but can it detect a yogurt pot on a waste sorting line?

A: The microcontroller only runs a given trained convolutional neural network, so it will detect whatever the network is trained to detect.

Q37: Which is more relevant AI models for microcontrollers, image recognition or time series anomaly detection?

A: STM32 microcontrollers can support both use cases and we have 2 tools to support: STM32Cube.AI (e.g. computer vision but also time series) and NanoEdge AI Studio (time series but also low resolution computer vision).

Q38: What are possible models for single dimension time series sensor data pattern recognition? Do you have recurrent neural network models for this or else?

A: I propose to check with NanoEdge AI Studio tool as a solution focusing on time series prediction.

Q39: Do you have support for yolo?

A: Yes, we have, please see e.g. https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/object_detection.

Q40: What data types are available for NPU, FP32 and Int8, any others?

A: Please see an excerpt of `stneuralart_programming_model.html` of Documentation folder of X-Cube-AI: All processing units are based on integer arithmetic with 8-bit, 16-bit, and 24-bit data path widths. They support both signed and unsigned formats. They are designed to support a fixed-point format, enhanced by shifters with rounding and saturation capabilities to adjust values. There is no hardware support for floating-point arithmetic (no floating-point unit). <https://www.st.com/en/embedded-software/x-cube-ai.html#overview>.

Q41: Where can I get more detailed information about internal NPU structure? Intend to include it in "Advanced computer architecture" lectures.

A: Please refer to RM0486 https://www.st.com/resource/en/reference_manual/rm0486-stm32n647657xx-armbased-32bit-mcus-stmicroelectronics.pdf and stneuralart related documents of Documentation repository <https://www.st.com/en/embedded-software/x-cube-ai.html>.



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Q42: Does STM provide some trainings on STM32N6 + ST AI Tools in order to exploit them at best?

A: Yes, the entry point for AI at the edge, including the STM32N6, is: https://www.st.com/content/st_com/en/st-edge-ai-suite.html. More precisely the latest X-CUBE-AI is now supporting the STM32N6 and contains some documentation (<https://www.st.com/en/embedded-software/x-cube-ai.html>). The ecosystem will be presented tomorrow if you are available (or in replay). Finally, some dedicated workshops will follow in 2025.

Graphics and multimedia

Q1: If using H264 encoder are there any additional license costs to pay?

A: Hi, no extra cost to pay when using the H.264 encoder.

Q2: With the introduction of N6, why would one use an H7?

A: It really depends on your needs, different MCUs tackle different Applications. In this AI Camera Application is the ideal application for N6 besides other like Display, etc.

Q3: Could an (external) USB camera be used with the N6?

A: Yes, the STM32N6 has 2 USB OTG interfaces, both with integrated high-speed PHY, so camera can be easily connected to STM32N6. The camera pipeline can't be used in this case, since it is directly connected to DCMI/CSI interfaces, but camera pipeline might be redundant for USB camera.

Q4: Can TFT RGB LCD (RGB888) be used at the same time with the Gigabit Ethernet and SRAM/DDR and/or other RAM?

A: Yes, maybe with some limitation on the package selection considering the amount of required pins.

Q5: Is it possible to detach the camera from the board and connect it with a longer flat band cable (1m)?

A: Detach the camera and put another one is of course possible but the capability to use a longer flat for 1m band will be camera interface dependent. So definite answer 😊.

Q6: Can I use the Graphics processing unit for anything else other than image processing, like, say offload some of the AI/ML tasks?

A: The NeoChrom is not a 3D GPU and is not suitable for use cases outside graphic processing, so I would say no.

Q7: Can OpenCV run on the N6? Does ST offer a computer vision framework?

A: Yes but using the Cortex-M55, OpenCV will not be hardware accelerated by the Neural-Art.

Q8: Do I correctly understand that MIPI-DSI will not be available on STM32N6?

A: You are right, the MIPI-DSI is not supported on the STM32N6 because of the targeted use cases (machine vision) and trade-offs that needed to be done (size, price).

Q9: Do you provide examples for processing sounds?

A: Please see https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/audio_event_detection.



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Q10: Graphic wise, is the N6 suitable for H264 720p 20FPS live playback from an RTSP stream with an overlapped GUI as the main application?

A: Software decoding capabilities benchmarking are still being consolidated internally.

Q11: Is the N6 capable of decoding H.264 streams as well as encoding? Is it suitable for 1080p playback?

A: Hi, H.264 decoding is only supported in software, benchmarks are on-going internally but first results are closer to 720p 20 fps than 1080p, to be confirmed.

Q12: Will ST provide the Camera as a product for industrial use?

A: Yes, we have image sensors in our portfolio as well, VD family, please contact your local sales or distributor for more details, or on our website.

Q13: Is the GPU able to compensate for non-square pixel?

A: Sorry, our GPU does not address such functionality.

Q14: Do ST provide Camera lib to simplify the camera implementation?

A: Yes, ST offers middleware library, as well as dedicated tool to tune camera pipeline called ISP IQTune. More information can be found on wiki pages here: <https://wiki.st.com/stm32mcu/wiki/Category:ISP>.

Q15: Can you describe more about the version of Yolo framework, used for the demo, was it mainstream v8, or else?

A: Please see section `object_detection` in model zoo repository https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/object_detection.

Q16: Can the NPU be used to help the graphics processing?

A: In fact the NPU could not be used for graphics processing. The NPU is really dedicated to AI convolution neural network inference.

Q17: Did you test other Human Pose Estimation algorithms?

A: Please see https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/pose_estimation.

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A: The microcontroller only runs a given trained convolutional neural network, so it will detect whatever the network is trained to detect.

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A: Yes, we have, please see e.g. https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/object_detection.

Q20: Seems that for the moment there is no text-to-speech and speech-to-text on model-zoo, only "audio event detection". Do you plan to integrate such LLMs in the next weeks/months?

A: NPU architecture supports convolutional neural networks.

Q21: Do you provide on your site pretrained LLMs ready to run on STM32N6, especially for audio application type speech-to-text and text-to-speech?

A: I would propose to see model zoo repository <https://stm32ai.st.com/model-zoo/>.

Q22: Do you provide examples for processing sounds?

A: Please see https://github.com/STMicroelectronics/stm32ai-modelzoo/tree/main/audio_event_detection.



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Q23: What about audio applications such as denoising an audio flow? Do you have demo code for this kind of application?

A: I would propose to see model zoo GitHub repository <https://stm32ai.st.com/model-zoo/>.

Q24: What are possible models for single dimension time series sensor data pattern recognition? Do you have recurrent neural network models for this or else?

A: I propose to check with NanoEdge AI Studio tool as a solution focusing on time series prediction.

Security

Q1: Is there any advantage to use a Secure element or TPM additionally to the secure features of the N6? If yes, which use cases?

A: A secure element and TPM has a higher degree of resistance in terms of security. But it also brings some advantages for the provisioning of credentials. But this is not specific to N6 and is just how a secure element could leverage the security level of your product.

Q2: Will N6 be compliant to Cyber Security Act?

A: N6 is targeting SESIP PSA level 3. The ROMed code is secure boot certified so should be compliant with Cyber Security Act.

Q3: Does STM32N6 have a capability to execute in place an encrypted firmware from external Flash?

A: The external could be encrypted/decrypted on the fly thanks to the MCE. The binary is physically encrypted but this one is seen as non-encrypted from the CORTEX.

Q4: Can you encrypt the weights of the NN?

A: Since they are stored in external flash you can use the on-the-fly encoding/decoding IP (MCE).

Hardware specifications and performance

Q1: Am I right that STM32N6 has no internal flash?

A: Right, it has 128KB of boot ROM and 4.5MB of RAM with possibility to expand externally. You will boot from bootrom and then jump into external flash executing code from there or copying into RAM.

Q2: Will there be a LQFP144 package release in the future?

A: For this kind of high Performance MCU the package is UPGA.

Q3: Are there other than Cortex-M55 mcus with NPU?

A: No, the only other Cortex-based product with NPU is the STM32MP2 which embeds a Cortex-A35.

Q4: Could an (external) USB camera be used with the N6?

A: Yes, the STM32N6 has 2 USB OTG interfaces, both with integrated high-speed PHY, so camera can be easily connected to STM32N6. The camera pipeline can't be used in this case, since it is directly connected to DCMI/CSI interfaces, but camera pipeline might be redundant for USB camera.



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Q5: Can TFT RGB LCD (RGB888) be used at the same time with the Gigabit Ethernet and SRAM/DDR and/or other RAM?

A: Yes, maybe with some limitation on the package selection considering the amount of required pins.

Q6: I don't understand. The STM32N6 ISP contains the MCU, NPU and camera?

A: N6 is a MCU with a Cortex M55, a NPU and an ISP which allows image signal processing.

Q7: When will the GP line (without NPU) be available?

A: GP line is already available.

Q8: Does ST have other MCUs that feature SPDIF-RX/TX?

A: Yes, there are many other MCUs supporting SPDIF. For RX we have dedicated peripheral SPDIFRX, while for TX this is usually implemented as part of SAI peripheral.

Q9: Can OpenCV run on the N6? Does ST offer a computer vision framework?

A: Yes but using the Cortex-M55, OpenCV will not be hardware accelerated by the Neural-Art.

Q10: Are the N6 I/O pins still 5V tolerant? As I see in the datasheet, it shows only 3.3 V tolerant. Also in the datasheet it does not say which pins are 3.3v tolerant, which not.

A: In fact the N6 I/O are 3.3V tolerant. I will report issue on documentation.

Q11: Does the board have storage like embedded flash?

A: Yes, the board contains flash storage: 1-Gbit Octo-SPI flash memory. See more at: <https://www.st.com/en/evaluation-tools/stm32n6570-dk.html#overview>.

Q12: Does it support hyperram and flash via hyperbus at the same time?

A: Yes, hyperram and hyperflash are supported. There are two physical ports, 16-bit and 8-bit, that can run in parallel.

Q13: Do I correctly understand that MIPI-DSI will not be available on STM32N6?

A: You are right, the MIPI-DSI is not supported on the STM32N6 because of the targeted use cases (machine vision) and trade-offs that needed to be done (size, price).

Q14: Can I use it in ADAS?

A: The STM32N6 is not certified for automotive domain at the moment, at least when the user safety is involved.

Q15: Does STM32N6 have a capability to execute in place an encrypted firmware from external Flash?

A: The external could be encrypted/decrypted on the fly thanks to the MCE. The binary is physically encrypted but this one is seen as non-encrypted from the CORTEX.

Q16: Graphic wise, is the N6 suitable for H264 720p 20FPS live playback from an RTSP stream with an overlapped GUI as the main application?

A: Software decoding capabilities benchmarking are still being consolidated internally.



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Q17: Is the N6 capable of decoding H.264 streams as well as encoding? Is it suitable for 1080p playback?

A: Hi, H.264 decoding is only supported in software, benchmarks are on-going internally but first results are closer to 720p 20 fps than 1080p, to be confirmed.

Q18: What about AD signal integrity? Could you preserve the same SNR for PWM centered AD?

A: Please see Table 82. ADC characteristics of DS <https://www.st.com/resource/en/datasheet/stm32n657x0.pdf>.

Q19: Will ST provide the Camera as a product for industrial use?

A: Yes, we have image sensors in our portfolio as well, VD family, please contact your local sales or distributor for more details, or on our website.

Q20: Is the GPU able to compensate for non-square pixel?

A: Sorry, our GPU does not address such functionality.

Q21: Can N6 support external dynamic or static RAM, say external 512 MB?

A: External memories can be connected either through XSPI interface (quad, octospi, hexadecapi), or through FMC which supports parallel SDRAM interface. Each interface supports 256MB of memory-mapped space.

Q22: What prevents Linux from being used on N6? Is it no software support yet or else?

A: The product is based on Cortex-M55 MCU core, while Linux is more suitable for microprocessor cores like Cortex-A.

Q23: Will there be STM32N6 dev. boards available in the future?

A: Indeed there are two Evaluation boards, our Nucleo board and also our Discovery Kit that will be available in EMEA distributors in January.

Q24: So there will be no Eval boards like STM32F779-EVAL?

A: Correct, this is not planned for the time being. STM32N6570-DK board is the actual reference to run a full evaluation of STM32N6 capabilities.

Q25: Can it be used in motor control applications? Any examples available?

A: Yes it can, but no public demo available yet.

Q26: Is the board STM32F411E Disco compatible with STM32CubeAI?

A: Yes, it is.

Q27: Is the schematic of the Eval-Kit open source?

A: Yes, normally all STM32 boards are coming with schematic and PCB source files. Please see here: <https://www.st.com/en/evaluation-tools/stm32n6570-dk.html#cad-resources>.

Q28: Will ST provide the Camera as a product for industrial use?

A: Yes, we have image sensors in our portfolio as well, VD family, please contact your local sales or distributor for more details, or on our website.

Q29: How can I get support from ST concerning using ST hardware in my project, how can I reach out to you?

A: The first step is to find your local contact, here: https://www.st.com/content/st_com/en/contact-us.html. Then you can log a ticket on: <https://my.st.com/ols>.



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Q30: Will there be STM32N6 dev. boards available in the future?

A: Indeed there are two Evaluation boards, our Nucleo board and also our Discovery Kit that will be available in EMEA distributors in January.

Q31: STM32N6570-DK seems difficult to purchase online outside of the USA.

A: Please check current availability here: <https://www.st.com/en/evaluation-tools/stm32n6570-dk.html#sample-buy>.

Q32: Do the "All peripherals enabled" current consumption numbers in the datasheet include the current consumed by the NPU?

A: One of the STM32N6 NPU software examples covers current consumption evaluation then it can be used following your particular use case.

Q33: Is this suitable for low power applications and what is the current consumption: operating, sleep current, shutdown etc.?

A: The consumption is quite much lower than an MPU. We have customers who create connected glasses with it. So yes, battery powered is possible but it's also quite dependent on your target and the use cases.

Q34: What are typical power consumption of the inference for battery powered applications?

A: For a YOLOv8-320 24.5fps we are at 300mW. In general, you have to expect hundreds of mW when running AI models, way less than an MPU.

Q35: Do you have real-life user case power consumption numbers? With and/or without using NPU.

A: Please refer to chapter 5.3.5 Supply current characteristics and relevant tables of DS, regarding current consumption evaluation for different use cases, see app n6-ai-pwr-meas <https://www.st.com/en/development-tools/stm32n6-ai.html>.

Q36: Is there any data on the power consumption and can it be used in a battery power product?

A: Please refer to chapter 5.3.5 Supply current characteristics and relevant tables of DS, regarding current consumption evaluation for different use cases, see app n6-ai-pwr-meas <https://www.st.com/en/development-tools/stm32n6-ai.html>.

Q37: For the demonstrations you have shown, what is the typical power consumption of the micro?

A: Hi Keith, for a YOLOv8n-320 24fps we are talking about 300mW. In general, for this kind of models you're always in the hundreds of mW ballpark number. We will release an application note and example on how to measure power consumption on DK hardware.

Q38: How suitable are these devices for low power applications, for example what is the sleep current, shutdown current etc.?

A: Much more low power than an MPU, then difficult to answer this as it's mainly depends on the use case from 500mW running AI, 70mW with coremark on the MCU, down to 71uW in VBat mode... In the datasheet, you have some data but difficult to have an exhaustive response here.

Q39: Can we get an estimate of the power used by the model?

A: We will be publishing soon benchmarks and also an x-cube package to run a full power estimation on STM32N6 discovery board hardware. To give you an average number, YOLO V8 24.7tps NPU@1GHz and CPU @800MHz power= 320mW.

Software and tools

Q1: Is there any RTOS available/supported for STM32H6?

A: Usage of STM32 is RTOS agnostic. Most commonly used one with STM32 is FreeRTOS.

Q2: How can I get support from ST concerning using ST hardware in my project, how can I reach out to you?

A: The first step is to find your local contact, here: https://www.st.com/content/st_com/en/contact-us.html. Then you can log a ticket on: <https://my.st.com/ols>.

Q3: Are there any licenses or royalties to pay to use the ST AI Tools?

A: No, the tool is free to use for STM32 customers.

Q4: What about software support for the various IP blocks like Neural art, Graphics, Camera pipeline?

A: Please see Cube_N6_FW library <https://www.st.com/en/embedded-software/stm32cuben6.html> and X-CUBE-AI software package <https://www.st.com/en/embedded-software/x-cube-ai.html>.

Q5: Is there any documentation available on NPU?

A: Please refer to RM0486 https://www.st.com/resource/en/reference_manual/rm0486-stm32n647657xx-armbased-32bit-mcus-stmicroelectronics.pdf and stneuralart related documents of Documentation repository <https://www.st.com/en/embedded-software/x-cube-ai.html>.

Q6: Is this running TouchGFX and FreeRTOS or Linux?

A: Hi, the STM32N6 is a microcontroller, so it can handle any RTOS, including FreeRTOS and ThreadX and TouchGFX supports it as well, no Linux.

Q7: To allow multiple tasks of FreeRTOS to use NPU on STM32N6, does FreeRTOS need to be updated to save and load content switches of the NPU similar to how it does for FPU?

A: No specific update of FreeRTOS, we only rely on the mechanism offer by this embedded OS.

Q8: In Cube IDE, how do you make sure a task is running on the NPU and not the main core?

A: No task (from an OS point of view) is running on the NPU, but you load thanks to the MCU the epoch that will be executed by the NPU. I would advise to have a look in our code example.

Q9: Is the board STM32F411E Disco compatible with STM32CubeAI?

A: Yes, it is.