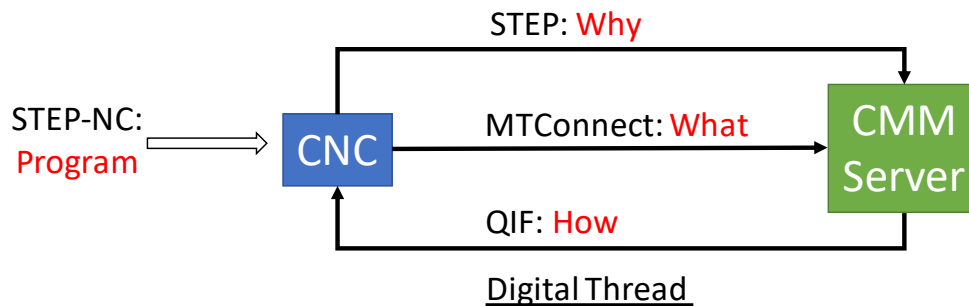


IMTS 2018 Grand Challenge

“Build it Here, Build it Now, Build it Right”

In 2018, we challenge the CNC machine tool vendors to show that they can deliver “build it here” for their customers at the IMTS and JIMTOF shows. We will give them model based, digital thread definitions for machining and measurement. The challenge will be to machine the parts, and use a central server to prove the results are correct.



There will be three ways to prove the results. In the first, the input will be a STEP file and the output will be a physical part that can be measured at the central location. In the second, the input will be the same STEP file but with touch probe points defined so that on-machine measurements can be delivered to the central server using a low speed MTConnect. In the third the inputs and outputs will remain the same, but machining coordinates will be sent to the central server using a high speed MTConnect, and used to build a digital twin in real time.

	STEP	MTConnect		QIF
		[1-10Hz]	[100-1000Hz]	
Challenge 1	X	-	-	X
Challenge 2	X	X	-	X
Challenge 3	X	-	X	X

In all three cases, the end result will be a QIF file describing how well the part has met its tolerances. The files will be made by the central CMM server. To participate you need to be able to read CNC programs defined by STEP. For challenge 2 you will need to be able to deliver measurement results using a low speed MTConnect [1-10Hz]. For challenge 3 you will need to be able to deliver machining coordinates using a high speed MTConnect [100 – 1,000Hz].

Schedule (July 2017 to November 2018)

- Month 1 - endorsement of standards groups
- Month 2 – endorsement of challenge sponsors
- Month 3, 4, 5 – presentations to interested parties
- Months 6 to 12 – rehearsals at test sites
- Month 14 & 16 – IMTS and JIMTOF