

17 THE PATTERN APPROVAL PROCESS: THE PAST, THE PRESENT, THE FUTURE, AS SEEN BY U.S. INSTRUMENT MANUFACTURERS

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What will the pattern approval process look like next year or in the year 2020?

Will it be different than it is today?

No one person can answer both these questions with 100 % accuracy but each of us here will agree that it will be different than it is today. In this room sit the leaders of the international metrology community. No one individual organization should be able to set the future of the pattern evaluation process, but all of us as a group can and must define what the future process should look like. To do this we need to begin now. We need to look at all the hard work that was applied to develop the current systems. We need to look at the current efforts of many of the OIML Technical Committees and their Sub-committees who are focusing their work in this direction.

I am here today representing the U.S. Scale Manufacturers Association membership as members of this metrology community. Our goal, as manufacturers, is not to undermine the approval process, but to streamline it; not to ask for easier standards but to work toward developing strong global standards. Our goal is no different than manufacturers of any other product: bring high quality, cost effective products, using new technology to the marketplace faster with no violation of the legal requirements and with a minimum consumption of natural resources!

Those of us here must work together to define what legal metrology will look like in the year 2020, to define the efforts needed to reach these goals, and begin working on them today. The most effective way to accomplish this is to look at where we have been compared to where we are today. We need to identify our successes and our failures and learn from both. We need to look at the needs of our customers and work together to meet them.

Beginning in the 1960s and continuing into the 1980s, individual United States weights and measures jurisdictions began to require that manufacturers pre-qualify their weighing instruments before allowing them to enter their commercial marketplaces. While these early evaluations were relatively informal and rudimentary, they met the needs of the day. In the mid-1980s, with some 15 or 16 individual state jurisdictions requiring certification, the National Conference on Weights and Measures in conjunction with the National Institute of Standards and Technology (NIST) developed the National Type Evaluation Program (NTEP). The program was a national system managed by the National Type Evaluation Committee that relied upon a small network of approved state and federal laboratories. These laboratories conducted instrument evaluations and issued national Certificates of Conformance. Under the leadership of

the National Conference on Weights and Measures, this program continues to grow today with a goal of developing common technical requirements designed to meet global product needs.

From this, I would now like to share with you an example of how two different members of the metrology community worked together to achieve a common goal. A goal that did not compromise any existing technical or legal requirements associated with the either country's metrology requirements. I am sure many of you in attendance can think of other working examples. This is only one.

By the early 1990s, the U.S. had a well-established evaluation program. U.S. manufacturers then looked to expand this program outside the U.S. borders. With the U.S. National Institute of Standards and Technology taking the lead role, this effort resulted in discussions that led to a bilateral mutual acceptance agreement with Measurement Canada to recognize each other's test data. The program's unique feature was that the U.S. and Canada did not attempt to harmonize their technical requirements; they "simply" reviewed and compared the two sets of technical requirements and agreed to evaluate the instrument to the more stringent requirement. As a part of this process, the laboratories on both sides of the border along with industry experts worked out standardized test procedures to assure uniformity in the end product, the test report. The testing laboratory then shared the results of this evaluation as evidence of compliance. Thus a single test system was developed which provided a single evaluation as the basis for issuing both a U.S. and a Canadian approval certificate.

Looking back, one can certainly feel a sense of accomplishment; a goal realized. Can we stop here? No! We need to look into the future. We need to set new goals and realize new accomplishments. Everyone has heard the statements "the world is getting smaller" and "the marketplace is more global." It's true; obstacles such as time and distance are a fraction of the inconvenience they were in the past. The obstacles of today are consumption of natural resources, global standards, time to market for new technology, and limited market potential. Products that were once designed and manufactured for a single national market are being replaced with ones that meet the requirements of a global market. As members of the metrology community we need to think along these same lines.

Some of this is already occurring. The previous example of the Canadian and US agreement is an indication of global thinking without compromise to national requirements. Other efforts in this area is the agreement between Australia and New Zealand to accept each others' test data, and the current effort of the OIML on the Mutual Acceptance Arrangement designed to permit acceptance of test data on a global level and open to anyone willing to participate.

Mutual acceptance of test data is a great first step, but it is only the first step. It clearly brings the metrology community and product evaluations to a higher level but it still has many shortfalls. One laboratory is reluctant to except the test data from a second laboratory because of confidence in the other laboratory's abilities. While this is an understandable concern, it causes delays in reaching an acceptance agreement. In an extreme example, the cost necessary to show an acceptable level of confidence may prevent the agreement from ever being realized and the first step never being reached.

Mutual acceptance of test data is a good idea but we must ask ourselves if this approach will ever be the normal mode of operation. Or, will the few examples that currently exist be the exception?

We must also ask ourselves if the evaluation of a single unit conveys satisfactory confidence in the manufacturer's ability to produce additional units to the same performance level as the one unit evaluated. If we have that confidence, then why have initial verification? Type or pattern approval should be enough! If we do not have this confidence then why express so many concerns regarding the confidence in the ability of other laboratories. Focus on the big picture, initial verification! This is where you will find the problems.

We should also look to the manufacturer to help in this area. Conformity assurance programs like the one defined in the NAWI Directive of the European Union and the Conformity Assessment (Production Meets Type) program of the U.S. Scale Manufacturers Association go a long way in providing confidence in the produced product. More confidence than the evaluation of a single unit built for the reason of type or pattern evaluation.

What are the issues we should be looking at today? How do we adjust today's approval process to overcome today's obstacles while preparing ourselves to address new ones in an effective and timely manner? Here are some of our thoughts:

We need to move technical standards to a global level! Some of us may think this is a large task. I assure you, from a technical position it is not. As manufacturers we are already aware of the many different technical standards that exist today. We need to understand the written word and how it applies to our products. We need to understand why the requirements exist so that we can communicate this within our companies. Our experience has shown us that these technical standards have many more similarities than differences. We need to be conscious of our individual and national concerns, but should not use them as a roadblock to a global standard; we should list them along with similar concerns from others and find a common solution. We must also look at the benefits that a global standard will bring.

Common technical requirements will result in fewer interpretation issues. Fewer interpretation issues will result in better educational opportunities.

More education results in a higher level of product compliance during the evaluation process and initial verification.

Develop a seamless approval system! A single manufacturer spends a lot of time, money, and natural resources to obtain all the approvals necessary to place his product on major markets. If we add together all the manufacturers' approval efforts we soon see that large amounts of each are spent. For example, if a manufacturer's goal is to place a product onto the global market he can be assured that at least two, and maybe as many as five, different approval organizations will be testing his product. To get his product to the marketplace in a timely manner means that at least two to five samples will be sent to various evaluation agencies. Each one of these samples will undergo evaluation to very similar requirements. This adds cost to the product, delays introduction to local markets and wastes resources. We must ask ourselves why?

As I mentioned before, we need to be aware of our individual and national concerns, but should not use them as a roadblock to a seamless approval system. We must also look at the benefits that a seamless system will bring.

Eliminate repeated testing of the same product to reduce cost, time to market, and wasted natural resources.

Allow national laboratories to apply knowledge to the initial verification procedures and market surveillance resulting in increased confidence in production instruments.

New technology can be placed in the marketplace faster by assisting and supporting local industries in maximizing efficiency while minimizing cost resulting in benefits to the local economy.

Develop An International Conformity Assurance Program! As mentioned earlier in this presentation, several members of the legal metrology community have developed conformity assurance programs. These programs contain a common theme, and ensure that continued production represents that of the sample evaluated. These efforts should continue but on a global basis. We should take care not to end up with 2, 3 or 5 different programs each having similar yet slightly different requirements. This is where we are with type or pattern approval today and this is one of the reasons we are here today. We need to learn from our experiences, we need to develop a single program that provides benefit to the consumer not to individual businesses. Benefits of a well-developed conformity assurance program are:

- ❑ Increase confidence that manufacturers move away for the ‘golden unit’ used for evaluation.
- ❑ Provides performance results to requirements that cannot be obtained during initial verification testing.
- ❑ Improves initial verification compliance.

The world is truly becoming a smaller place; national laws and requirements are being adjusted to fit a more global world. Most of this work is being lead by upper levels of our governments. We, as members of the legal metrology community can sit back and wait to be told what our future will look like or we can begin working on it today and feel confident that our efforts are directed to a common and global goal.

Discussion

Comment: What exactly is meant by ‘global technical standards’? In the field of NAWI, for example, there is an OIML Recommendation also adopted as a European Standard which is widely used in Europe and many other parts of the world. So what is missing in such a Recommendation to become a ‘global technical standard’?

Reaction: R 76 is an excellent standard which is accepted in many countries in the world, but not in the USA and that is a problem. I think that there are countries that accept R 76 on paper but when it comes to practice, they do not follow it either.

Comment: Within the USA, is there a single standard or are there different standards from state to state?

Reaction: There is one standard, Publication 40, which is accepted by all states. It is a basis for the national type approval process. When this process is followed, then all states accept certificates. This standard, which is more or less the equivalent of R 76-2, is under the responsibility of the National Conference on Weights and Measures.

Comment: At the end of the presentation was mentioned a 'common goal', understood as common to industry and government people. A good relation between both is necessary and seems to be the reality on occasions such as this Seminar. But when speaking privately with government people, they very often speak about industry as people who try to make money, are ready to violate the law, and need a lot of inspection and surveillance to see that everything is going in the right way. On the contrary, when speaking privately with industry, they worry about the bureaucracy which makes industry's life very difficult, they wish for deregulation, etc. For a good common future, we need a considerable change in the direction of speaking in terms of partnerships between industry and government instead a kind of two party system. It is very easy to say that, but how can it be accomplished?

Reaction: These views are quite correct. Industry shall make money, produce, and maintain employment. The situation described results from human nature. The cultures are different from one group of countries to another. Efforts have to be made to increase contacts and discussions between industry and administrations. This is done in the USA at SMA level and the OIML should constitute such a forum for mutual contacts.

Comment: In general, manufacturers agree with mutual acceptance and with one specification for the whole world, but they also need assistance to avoid the bad practices of certain manufacturers.

Reaction: It is true that there exist manufacturers with bad practices against which national and international bodies should try to struggle.

Comment: The OIML has very close contacts with the European Commission, and with ISO, but does the OIML have such good contacts with the US NCWM?

Reaction: The CIML President, the BIML Director and certain CIML Members have been invited on several occasions to attend and address the NCWM. In addition, the US CIML Member systematically attends the NCWM and participates in a better mutual understanding. The NCWM is well aware of OIML activities. The former US CIML Member, Dr. Chappell, gave more details about the NCWM and its role in the US decision to join the OIML. He also described the way consensus is reached within the NCWM.

