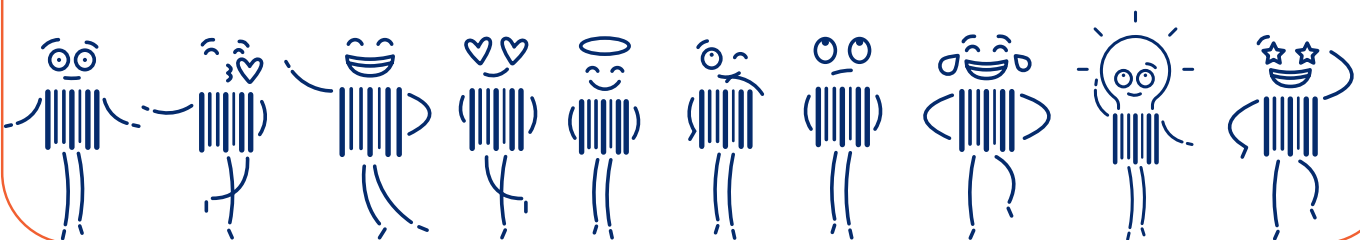


WE'VE BEEN
TOGETHER FOR
40 YEARS

**HISTORY OF STANDARDIZED
AUTOMATIC IDENTIFICATION:**
from EAN Czechoslovakia
to GS1 Czech Republic



Preamble

Fifty years ago a revolutionary change was carried out in retail trade through introducing the barcode of the American standard UPC system. On its basis its European counterpart was soon created, so far the most well-know and the most used system of the EAN-13 barcode. Another important fact is linked to this system. In 1983, the European standards for automatic identification of the goods by means of the EAN barcode were introduced by Czechoslovakia as the first country of the socialist block (Yugoslavia, which had introduced the standard already in 1982, had out-of-the-blocks status). The first Czechoslovak barcodes appeared on chocolates, beer or LP records, delivered to Western markets.

1. Invention of the barcode

The predecessors of large self-service shops offering a broad range of goods appeared in North America in the period 1915 - 1920. The traditional shops with counters and the shop-assistants serving each of the shoppers faced a serious competition. The chain stores brought later another development stage of sales of products and they had all the conditions for an uncontrollable expansion: they offered more brands of products at one place, they economized time, they were cheaper. Even from the point of view of operating costs. The barcode was created by virtue of the requirements of retail shops. The turnovers of the retail shops and the related numbers of items passing through the cash desks increased considerably in the U. S. A. after World War Two. And the manual marking of each of the items started to be more difficult, very costly, uncontrollable.....

In 1947, Mr Samuel Friedland, owner of the chain stores in Pennsylvania, offered to carry out a project of automated marking of goods in Drexel University in Philadelphia, Pennsylvania. The dean of the University, however, refused to carry out the project. The graduates of this University, Mr Joseph Woodland and Mr Bernard Silver, undertook the project themselves. „The Newton´s apple“ fell on Woodland´s head on a Florida beach. The former passionate scout tried to solve the puzzle of how to translate the Morse code into a sequence of letters and digits. On the beach he suddenly engraved into the sand unwittingly four bars with his fingers. It occurred to him: “The bars could be of different widths and they could correspond to dots and dashes“. That means they could correspond to the letters or to the digits. The so called “Classifying apparatus and method on the basis of light echo on bars“ was patented by Mr B. Silver in 1952. The patent comprised the linear barcode and its variety in the form of centered circles, the so called bull´s eye. The codes were reverse - unlike the present codes - creating white lines on a black background. On the basis of optical system which served to synchronize sound and image in cinemas, both scientists developed a barcode scanner.

After some twenty years, the invention could be used in practice.

2. IBM brings the invention into practice

At the end of the sixties, the representatives of the American retail shop companies set the alarm bells ringing. The labour costs (incurred by labour in cash desk zones) went up to 2/3 of all costs and they were twice as high as the prices for merchandise from the suppliers. The system of the manual handling at cash desks was insupportable. The commercial chains in the U.S.A. suggested to search for a solution how to code the products and how to decode them automatically at cash desks. The challenge was heard by a number of technological companies. In one of them the following conversation took place.

1969, the IBM development center, Raleigh, North Carolina

„Paul, this will never work. You say you are going to print these bars on labels. You are going to stick a barcode on a pack of cigarettes. You will pass the label along the hole, manually, in a variable speediness. Paralelly, and on up to fifteen cash desks at once! The computer system of the shop will find automatically the price, you will print it; you will manage all of this so quickly that the client will not be bothered by waiting and will not leave the shop. And you want money from me to develop a device which will perform all of that!“ Mr Bob Evans raised his eyebrows. But he believed in his colleague, Mr

Paul McEnroe: „OK, I give you one year to do so. But if this thing does not work, you will look for another job!“ Mr Paul McEnroe kept his job. The IBM Company was involved in the competition to create machine-decodable symbol carrying numeric format for automatic identification of products defined by the association of the American retail shop companies Uniform Grocery Code Council in 1970. The inventor of the first barcode Mr Norman Joseph Woodland worked in the IBM team, too. The result of the work of the IBM team was – almost twenty years after the invention of the „bull’s eye“ – the UPC draft symbol (Universal Product Code). In 1972, the UPC linear barcode, developed by IBM, was entered into the competition to invent uniform standard for identifying products, organized by the industrial leaders of the U.S.A.

3. Competition to invent a standard and the first scanning

In 1972, a twelve-digit structure of numbering UPC products was introduced. Mr N. J. Woodland’s and Mr B. Silver’s invention was proven by the practice the same year. The trial operation of the automatic identification of the goods using a barcode was launched in the Cincinnati supermarket Kroger. The bull’s eye, however, proved to be a development deadlock – the exact reproduction of the centered circles by print brought about problems.

On 3rd April, 1973, in the competition for a new carrier of information – machinereadable symbol in which the UPC code would be coded, launched by the organization Uniform Grocery Code Council, the IBM concept was elected from among 7 projects. Unlike the twenty-year old concept of the bull’s eye, this code looked the same like the codes we use nowadays.

Another historical milestone came on 26th June, 1974. In the Ohio supermarket Marsh, not far from the IBM premises. One minute after 8 o’clock, the cashier Sharon Buchanan, the first one in the history, scanned at the cash desk a standard barcode on a package of a product. This product was a bulk packaging of chewing gums.

FIFTY YEARS LATER

The barcodes of the GS1 system mark nowadays over one billion different products delivered by more than two million companies on the whole planet; they are loaded daily in more than 5 million retail stores of all formats. Nowadays, there are supermarkets equipped with up to two hundred cash desk scanners through which pass more than 3.000 products every minute.

4. Creation of EAN International and of the barcode EAN-13

50 years ago, a revolution which considerably changed the image of commerce began. The automatic identification by means of the standard barcode made a prompt price marking possible. A basis to create other systems was laid down which in the future helped develop the international trade and increased significantly the efficiency of many related operations. In the seventies, the standard served „provisionally“ to mark the goods. At the beginning of 1974, a meeting of the delegates of eleven European countries took place in Paris (Belgium, Denmark, France, Italy, Germany, Netherlands, Norway, Austria, Sweden, Switzerland and Great Britain). The participants were the directors of big retail trade companies, the producers and the EEC representatives (European Economic Community). They decided to introduce a uniform standard for automatic identification of items to facilitate the cross-border trade within the EEC.

In 1976, a new data carrier was created on the basis of the UPC original barcode, i. e. the barcode EAN-13 enabling the global use of the standard thirteen-digit identification structure. The organization European Article Numbering Association (E.A.N.A.) was founded the following year, which later became EAN International as an international nonprofit association having its seat in Brussels.



5. Involvement of the Czechoslovak Socialist Republic in EAN

In spite of the world division into two political and economic systems, the States of the two blocs traded with each other. At the end of the seventies, however, the Czechoslovak Foreign Trade Corporations faced more often the requirement of the Western clients to mark the exported goods by barcodes. In 1979, the Export Director of the national enterprise Čokoládovny, Mr Jaroslav Camplík (former President of EAN Czech Republic since 1994) brought from Great Britain the barcode EAN-13 donated by the client Tesco Stores; the partner thus conditioned the future trade exchanges.

The brewers, the producers of gramophone records, sausage and frozen-food products, stationery or safety-matches were in a similar situation, for example. The barcodes that appeared on the Czechoslovak products were made primarily abroad and they bore the national prefixes of the customer countries. In 1980, the printing works in the town of Skalica, Slovakia, printed the first barcode according to the filmmakers imported from Great Britain and installed a device for quality control of the barcodes. At that time, a key session of EAN International on further broadening of the organization took place.

„It is vital and irreversible that the system becomes world-wide“ this was written in the resolution of the group led by Mr Albert Heijne, grandson of the founder of the retail chain of the same name.

The first scanning of the barcode EAN-13 in retail outside Europe was reported in 1982 by Japan (Japan became a member in 1978 as the first non-European member). In the same year Yugoslavia joined EAN International, followed by Czechoslovakia in 1983 which became the 19th member of EAN International and, at the same time, the first representative of the Eastern bloc. Mr Jaroslav Martinic was appointed Director of EAN Czechoslovakia. As national prefix, i. e. the first three digits of the numerical sequence encoded in the EAN-13 symbol, the well-known number 859 was assigned.

The oldest national users of EAN system, respectively GS1 who are active so far

COMPANY	GLOBAL COMPANY PREFIX	YEAR OF INVOLVEMENT/YEAR OF NUMBER ASSIGNMENT
Plzeňský Prazdroj, a.s.	8594404	1984
Budějovický Budvar n.p.	8594403	1984
Jan Becher - Karlovarská Becherovka a.s.	8594405	1985
KOH-I-NOOR HARDTMUTH a.s. ČB	8593539	1985
SUPRAPHON a.s.	8590233	1986
VITANA, a.s.	8593837	1987
Crystalex CZ, s.r.o.	8590207	1987
Selleir & Bellot a.s.	8590690	1987
RUBENA a.s.	8593375	1989
JITEX COMFORT s.r.o.	8593478	1989

6. Memories of Mr Jaroslav Camplík, former President of GS1, Czech Republic

It was the year 1979. The Head of Export of the company ČOKOLÁDOVNY Mr Jaroslav Camplík was faced with a fait accompli imposed by the commercial partner in England, the company Eagle Distributors who delivered the Czech products to the British group Tesco: From now, all your goods must be marked with EAN barcode labels. Four years later, the Czechoslovak Socialist Republic (as

the first State of the Eastern bloc) was assigned the national prefix 859 – on packaging of the products it has been printed for more than thirty years. Mr Jaroslav Camplík managed to bring the Czech Republic back to the traditional industrial countries, newly in IT era. After in his capacity of President GS1 Czech Republic he has been acting to further broaden the global standards.

WHERE DID THE FIRST INCENTIVES TO INTRODUCE THE EAN CODES IN THE THEN CZECHOSLOVAKIA COME FROM?

From 1971, I occupied the position of Director of Export in the industry branch ČOKOLÁDOVNY which controlled by that time fifteen enterprises in all Czechoslovakia. At the turn of the seventies, we exported big volumes of chocolate desserts to Great Britain. One part of the exportations was designed to Tesco which due to their policy of low prices belonged to the chains achieving largest turnovers. Every year before Christmas we dispatched to Great Britain, including to Tesco, 900 tons of desserts. They were relatively large deliveries of different sorts. For the sake of clarity: the Czechoslovak greatest client, i. e. the Soviet Union, bought approximately 5.000 tons of the goods a year. The contact with our British partner was resumed every year. During our visit in 1979 we got in our hands the chocolates which had a barcode on the bottom. We could see such a barcode for the first time; in Tesco, they had introduced the automatic identification of consumer units. They gave us to understand: from now, all your products must be marked with these codes and our business may go on.

HOW DID YOU HANDLE THIS REQUEST?

After we returned to Czechoslovakia, we found that practically nobody was aware of the barcodes here, neither the polygraphs. The only possibility was to inquire for the barcodes, respectively for their filmmakers with a client through the Foreign Trade Corporation KOOSPOL and their affiliation SUGOSA in London to ensure their production. As our country was not a member of the international organization EAN, the received filmmakers were English. For this reason, the first three years our goods were marked with the English codes. Later we looked for printing works which could be able to print the codes. At the beginning, we were obliged to order the production of the encoded packages from a firm in Austria which realized for us more complex packages designed for the goods exported to Western countries. The national enterprise GRAFOBAL in Skalica, Slovakia, undertook the production of the packages, which nowadays belongs to the top producers of packages in Central Europe. In the end, the packages were printed; however, we did not know whether the codes would work. Just as now, the quality of the barcode was very important.

DID YOU GET A LIST OF REQUIREMENTS WHICH THE BARCODE SHOULD MEET?

We were only told that the barcode should be readable. In order to find out whether the barcodes would be readable, we have imported through the KOOSPOL Affiliation a control device located at GRAFOBAL PRINTING WORKS, and by means of this device we started to verify whether the barcodes were readable. This may be considered as year zero of automatic identification in Czechoslovakia. The importation of the above device meant also the first series of troubles with Czechoslovak authorities which considered the activities linked with the importation of similar technologies a priori as suspicious. The authorities were very doubtful when they saw that we had received the device only declared as customs entry. After three years, the device was given to us as worn-out. However, the State authorities understood the situation. The Government representatives realized that the elements of automatic identification will be henceforth an indispensable condition for exports and the exports brought some more foreign exchange to the state budget.

TO WHAT EXTENT WERE THE CZECHOSLOVAK GOODS COMPETITIVE IN THE COUNTRIES WEST OF THE CZECHOSLOVAK FRONTIER?

The production of the national enterprise ČOKOLÁDONY was absolutely competitive. The quality of the products was high. However, we could not be competitive as far as the packages were concerned. Their standards declined progressively due to economies and we had no other possibility but to order the production of our packages west of the Czechoslovak frontier.

WHEN WERE THE CODES CONTAINING THE CZECHOSLOVAK PREFIX ASSIGNED TO THE CZECHOSLOVAK COMPANIES?

Soon more and more Czechoslovak companies raised the requirement to label their products with the EAN barcode. Such a condition was faced by the Foreign Trade Corporations more and more often and this concerned above all quick-turnover products but also gramophone records, for example. In our case, another request came from Germany where we delivered chocolate figures. In 1983, by virtue of the proposal of the Ministry of Foreign Trade, the government decided to join the EAN international association through the Czechoslovak Commercial and Industrial Chamber. We entered the organization as the 19th member and as the first country of the Eastern bloc. This was the end of the uncontrolled period of automatic identification. The institutionalized era of the barcodes began, and the first EAN members Czechoslovakia, in addition to the company SFINX ČESKÉ BUDĚJOVICE, who was a member of the Čokoládovny group, became other five enterprises as strong exporters. Since that time we have exported our goods under the Czechoslovak EAN code with the well-known prefix 859.

WHEN DID CZECHOSLOVAKIA „BECOME INDEPENDENT“ IN THE SENSE OF A PRODUCTION OF ITS OWN BARCODES?

At first, the printing of packaging or self-adhesive labels with EAN codes was provided for abroad. However, the production was launched soon by some of the most modern printing works of this country. In addition to the mentioned GRAFOBAL, there were OBCHODNÍ TISKÁRNÝ KOLÍN (Commercial Printing Works in the town of Kolín), KRKONOŠSKÉ PAPIRNY (Papermill in the Giant Mountains – Krkonoše), CHEMOSVIT SVIT NA SLOVENSKU (Chemosvit Svit in Slovakia), VRATIMOVSKÉ PAPIRNY (Papermill in the town of Vratimov), and JIHOČESKÉ PAPIRNY (Papermill in Southern Bohemia). However, the raw materials for such printing were imported by that time. The filmmasters were imported, too. The national enterprise GRAFOBAL got its own equipment for the production of filmmasters only in the last hours of the old regime – at the end of November, 1989.

WHAT BRANDS OF THE GOODS WERE LABELLED WITH THE BARCODES BY THAT TIME?

Generally speaking, foodstuffs were one of the first articles to be labelled with the barcodes. The other assortment was labelled in this way later. While it was enough for a store to have a normal cash desk, it was not enough for a grocery store chain. As soon as cash desks equipped with scanners of barcodes appeared in Western Europe at the end of the seventies, there was an imminent pressure on the foodstuffs producers to label their products with EAN codes. For example, in Great Britain 97 % of foodstuffs articles were labelled with barcodes in 1986, while it was only 40 – 60 % in case of consumer goods. The endeavours to economize labour and working times, the need for accurate records of warehouse stock and optimization of warehouse processes were the reasons for introducing automatic identification and data capture. In this respect, the foodstuffs products were followed by textile products and another assortment. At the beginning, mainly the consumer units were labelled but the new, modern systems of storage brought about the labelling of business and logistic units.

WHAT DID THE BARCODE BRING FROM THE POINT OF VIEW OF THE CONSUMERS?

The creation of supermarkets brought a completely different way of sales. In the preceding era, a man entered a shop, he queued and he depended fully on the shop-assistant, housewives asked for information whether the goods are fresh and the like. The buyers could not verify the data. There were no regulations on the marking of information on products; the legislation in vigour did not develop. The origin of self-service stores, in spite of clear quality advancement from counter sales, did not mean any revolution. It was the very automatic identification which brought a revolution. Before the origin of the barcodes the self-service stores worked with label markers and the personnel of the store had to preset the price and had to mark every item of goods with the price tag. The shop-assistant charged the price of the goods at the cash desk according to the label. It was an incredible bulk of extra work to mark manually the quantities of the goods. Also the warehouse was administered manually which

entailed increased exigencies for labour and time and which brought a high number of mistakes. The automation and the data linking processes in replenishment of goods in the era of stock cards were pure science fiction.

WHAT DID THE YEAR 1989 MEAN FOR EAN CZECHOSLOVAKIA?

The model of the Czechoslovak membership in EAN International through the Czechoslovak Chamber of Commerce and Industry the EAN Center at the Administration of Federal Material Reserves functioned practically without any change until 1989. The same was the functioning of GRAFOTECHNA as a center for the preparation of print templates where this company in fact had a monopoly.

Soon after the revolution Mr Jaroslav Martinic managed to impose a strategic decision of complete independence of EAN Czechoslovakia. Thanks to this step the organization had optimal conditions for its development. It is not a matter of course – for example in Poland and in Hungary the process of getting autonomy from similar overbureaucratic apparatuses was longer and more complicated. This had a negative influence on their flexibility and ability to work.

THE JOINT CZECHOSLOVAK ORGANIZATION DID NOT LAST FOR A LONG TIME...

After the split of Czechoslovakia in 1993, the original common platform continued until 1994, although under a different denomination (EAN Administration Center for the Czech Republic and the Slovak Republic). In 1994, the public-interest association EAN Czech Republic and its Slovak counterpart started their activities. At that time, I was addressed by Mr Jaroslav Martinic who asked me to become a founding member on behalf of the company ČOKOLÁDOVNY, S. A. We shared this process at „the common table“ together with the representatives of the companies GRAFOTECHNA, KODYS, MSB LOGISTIK, PORS, PRONTO PLUS and the mentioned ČOKOLÁDOVNY.

HOW ACTIVE WAS THE CZECHOSLOVAK ORGANIZATION WITHIN EAN INTERNATIONAL?

At the very beginning, there were two very important moments which envisaged a future, a very intensive cooperation with the central office of EAN International in Brussels and which confirmed at the same time the Czechoslovak leading position in the sector of automatic identification in the countries of the Eastern bloc. The first moment was the creation of the working group for introduction of the EAN system in retail at RVHP (at the Council of Mutual Economic Assistance) in the pilot department store which was supposed to become an example for the other members of the Council. The project of the department store was successfully realized in 1986. Mr Jaroslav Hilšer, official of the organization PORS, was responsible for the project. The first regular customers could witness the barcodes used in practice in „House of Elegance“ in the street „Na Příkopě“ in the center of Prague. This „laboratory“ in Czechoslovakia was soon followed by projects in the towns of Benešov, in Department Store KOTVA in Prague and in two department stores in the town of Bratislava. The second milestone was the Czechoslovak initiative developed in the working group for introduction of norms arranging automatic identification within the RVHP (the Council of Mutual Economic Assistance). Through the Federal Ministry for Technical and Investment Development, Mr Jaroslav Martinic managed to impose the adoption of the Western norms in the Eastern bloc. This awarded grant (in the terminology of those days it was spelled: the national research project) was handled by a team of experts headed by Mrs Kristina Radníková and Mrs Jana Kučerová. The obligatory norms of ČSN (Czechoslovak state standards) – Marking of consumer trade items and packaging by the EAN barcode were issued in 1987.

AND HOW ABOUT THE ERA OF THE INDEPENDENT CZECH ORGANIZATION?

Since the origin of EAN Czech Republic in 1994, a constructive cooperation has been developed; the Czech Republic did not miss almost any of the fundamental international meetings. Personally, I attended the overwhelming majority of the general meetings. It is necessary to state that we were considered to be exotic species there. We were the first ones to participate from the socialist block who acted actively and in a significant way at these meetings. We had prepared the ground by means of our active attitude in the preceding years when we reacted – more or less from a distance only – on the EAN



Czech Republic

activities. A new phenomenon was our participation in different working groups, for example for the sector of healthcare or textile industry. Thanks to our active attitude we succeeded in creating a certain reputation among the delegates to the general meetings.

AT THAT TIME, A VAST AND COMPLICATED PROJECT OF UNIFICATION OF THE NORTH AMERICAN ORGANIZATION UCC WITH EAN INTERNATIONAL WAS PREPARED...

In 1998, the EAN and UCC Strategic Plan for 21st Century was adopted to merge the two organizations practically into a single structure. The whole process took five years. The American part undertook to accept the „European“ 13-digit codes and to adopt gradually the denomination and the identification structure of the EAN System. I had the honour – as member of the international board of EAN International – to be involved in the merger of the two dominant standardization organizations. As EAN Czech Republic, we supported actively the merger. The most complex for the EAN Member States was to persuade the American partners to merge which lasted for many years. As the international trade exchanges expanded (mainly between the U. S. A. and the Latin American countries which used the EAN system), the existence of the two incompatible systems was unbearable in the long run.

WHEN WERE YOU ELECTED MEMBER OF THE INTERNATIONAL BOARD OF EAN INTERNATIONAL?

The International Board of EAN International had at that time 23 members and it was composed exclusively of the representatives of the Western countries. In the middle of the nineties there was a growing opinion in the International Board that it would be profitable to have a representative from the Eastern Europe; my election as member of the International Board took place in 1997 at the session of the General Meeting in Chicago. My task was to explain to the representatives of the traditional Member States that new countries joined the organization where the application of the standards had not progressed so much as in their countries. That it was necessary to take note of certain backwardness in the new countries from the point of view of equipment and background and to respect their interests. For example, I spoke also on behalf of the African countries or Mongolia, i. e. the countries which started to be active in this field. On the contrary, I promoted the introduction of new solutions, I explained the importance of future investments in order to catch up with the speed of these developments.

At the meetings of the countries of the Eastern Europe (at the beginning, the countries were divided in countries of the „old“ and the „new“ Europe) I interpreted, explained and defended, as member of the International Board, the decisions and the intentions of EAN International Board. In 2000, at the General Meeting in Beijing I was reelected member of EAN International Board for another three years. I occupied the position of Chairman of Legislative Committee of the International Board. After I had completed my term as member of International Board of EAN International, it was a big success to elect another representative of the Eastern Europe. Mrs Elzbieta Halas, Poland, continued with success to impose the interests of the Eastern region. I could not stand for a third consecutive term but we had Elzbieta´s support for another six years. When Elzbieta completed her terms, unfortunately nobody else from the Eastern Europe resumed the membership in the International Board.

ING. JAROSLAV CAMPLÍK

Born in 1942. He completed his studies by his final exams in 1960 at Economic School, branch International Economic Relations. After his studies he started to work in the Foreign Trade Corporation Motokov (later Merkuria). In the years 1969-1970 he occupied the post of director of the Czechoslovak affiliation IMPRE in Venezuela. During his employment he studied at Prague School of Economics, branch foreign trade, which he completed in 1971 and he graduated as Commercial Engineer. From 1971 he worked in o. p. ČOKOLÁDOVNY in successive steps as Director of Export Department, Commercial Director and Director General. After the privatization of the company ČOKOLÁDOVNY by Nestlé and Danone and after the inception of joint venture in 1992, he continued the function of Director General and Chairman of the Board of Directors for six years, later he occupied the position of Vice-Chairman of the Supervisory Board. After the split of the company ČOKOLÁDOVNY, S. A., in two companies, i. e. Nestlé and Opavia, Mr Camplík acted as Vice-Chairman of the Supervisory Board of the two companies. He occupied the post of President of Food Chamber of the Czech Republic of which he is co-founder. At the same time, since 1994 he has exercised the function of former President of EAN Czech Republic and he has been active until 2023, when he was replaced by Mr. Pavel Moravec from Nestlé company.

7. Personalities GS1 on the membership of Czechoslovakia in EAN International

On the occasion of 30th anniversary of the membership of the Czechoslovak Socialist Republic in EAN International GS1 Czech Republic, the Czech Republic received congratulations from the top personalities of the international community GS1 with whom the Czech member organization has maintained active working relations. **Mr Laurie Wilson**, Director of EAN Australia and President of the Managing Board of EAN International in the years 2000 – 2003: „A general perception was that the EAN International needed to dramatically speed up the process of expanding its barcode ID system beyond its traditional base of Western Europe firstly into Eastern Europe as the political barriers were steadily dismantled, and as moves to consolidate and enlarge the EU/EC endeavour within and across that broader territory expanded. In this regard it was notable that two of the earliest new entrants to the then EAN system from outside the traditional Western bloc, from the Eastern bloc geography, were the Czech Republic followed by Hungary, who joined one year later. There is no doubt that their entry quickly attracted the attention of and motivated other Eastern nations where the opening up of free commerce prompted businesses to seek a modern and standardised system within the space of free trade. The lead from the Czech and Hungarian nations and their respective business entities, both of whom were already seen to be leading those regions in their general business development culture, clearly catalysed nations/business regimes from other global territories to follow their leadership. The effect on the confidence of many business and national entities from the further Eastern regions to take the step was clearly enhanced. Thereafter from the late 1980s and during the 1990s a steady stream of Eastern bloc nations, and beyond into the central and sub Asian regions adopted the EAN system and became members. Concurrently new members from the broader Asian, Middle Eastern and South American nations.“

Mr Etienne Boonet, Director of EAN Belgium/Luxembourg participated in the session of the Board of EAN International in 1997, the year in which Mr Jaroslav Camplík was elected member of the Board: „It is important that every part of the world is represented at the MB. As well the founding fathers as the new MO’s must be represented at MB level, so GS1 Czech Republic had his place in the Board and could contribute a lot to the further development of the Global organisation. That is why the candidature of the Chairman of EAN Czech Republic was accepted.

The relation with the new member has always been a positive one. New MO’s want to adopt the GS1 standard as soon as possible and they expect support from the more mature organisations. Their willingness and open minds were a great help to the success of the implementation of the standards worldwide. Thanks to Pavla I have only positive memories of my relationship with GS1 Czech Republic. Apart from the huge efforts to implement the GS1 standards in the Czech Republic, I appreciated the way GS1 Czech Republic participated in the different international activities as well on European as on global level. Having members with a broad view on the new challenges is very important.

Mr Rafael Florez, Director of GS1 Colombia

The election of the representative of the Czech Republic as member of MB EAN was a key decision. Until that time, most of the members of the Board came from developed countries. I had the honor to be Mr Jaroslav Camplík’s colleague in the Board. We were on one ship. Mr Camplík, the same as me on behalf of Colombia, from the point of view of standards, represented a developing region. We have had very good relations with the new member organisations of Central and Eastern Europe. From the geographic point of view, we were distant, although from the point of view of development of implementation of global standards we were very near to each other.“

Mr Tim Smucker, GS1 Chairman Emeritus

„The support of senior executives is critical to ensuring that GS1 solutions are aligned with business needs and that they are successfully implemented across sectors. When Mr. Jaroslav Camplík was elected to the GS1 Management Board and throughout the years before and after, the Board has been comprised of exceptional leadership. Every GS1 Member Organization makes a difference and is a voice

to represent their member companies. As in the past, we are certain we can count on the Czech Republic for your continued commitment and contributions as we evolve to our next GS1 level of excellence. There are few, if any, organizations that are as diverse as GS1. We have found success in embracing our diversity, challenging ourselves to understand one another and then seeking common ground. It is this unity that allows the GS1 community to „See One Vision. Speak with One Voice. And, Act as One Organization.“ Even though technological advances will keep us connected, GS1 is still driven by people and relationships. If we continue to invest in our people and build our relationships with one another we will achieve our vision. Personally, I am blessed to have GS1 friends around the world that share my passion for GS1 and the value global standards create for commerce. On the occasion of the 30th anniversary of the foundation of GS1 Czech Republic, I wish to thank you for your excellent work in introducing GS1 standards in the European region and for the important share in the complex global management of GS1 community during the last 30 years. As with all GS1 Member Organizations, the GS1 community depends on the Czech organization to work within your region to help users gain the most out of the GS1 Standards. GS1 Czech Republic, under the leadership of Mr Jaroslav Camplík and Mrs Pavla Cihlářová, contributed considerably to GS1 growth. To grow further, it is important that you pursue new opportunities in Global Commerce, Food Safety and Healthcare. We can rely on you inspiring us on our way of transformation and growth of GS1. To strengthen the community, it is vital that every member Organization preserve and maintain the fundamental beliefs and principles of GS1 – specifically, remaining neutral and user-driven and user-governed. Every contribution leads to a success. Many successes build momentum. We are certain that the next 30 years for the GS1 Czech organization will continue to sustain a momentum of success.

Mrs Elzbieta Halas, Director of GS1 Poland and former Chairperson GS1 in Europe, member of the Management Board of EAN International in the years 2003 – 2009: „Our region, quite young then, neither was listened to very often on the international stage, nor had any influence on the international organization. Having someone very respected and influential, like Mr Camplík, on the Board, gave us a chance to change it. My organization joined EAN International 2 years later, so naturally we learned a lot from EAN Czech, supported each other and exchanged experiences, what was extremely helpful not only then, but it is also nowadays. Moreover, since the beginning there has been a special friendly relationship, also on a personal level, between the first CEO of EAN Czech Republic and EAN Poland. When there was a lack of general specifications or mentoring programs, we found information in most cases in EAN Czech Republic. EAN Czech Republic has had always a practical attitude towards the implementation of GS1 global standards. That is why the other East European member organizations often followed the model implemented by the Czech organization. For example, the Polish national system for coding products with variable weight is based on the Czech solution. The Czech colleagues have always been ready to give us support. I gladly remember the common consultation how to introduce barcodes in both countries. Czech EAN organization was one of the first from Eastern bloc who joined EAN, so it was a pioneer and helped the others a lot. Your organization has had always a very practical approach to implementing GS1 standards, so many MOs in Eastern Europe often look at and follow the suit of GS1 Czech Republic. Thanks to Mr. Camplík, his diplomatic and leadership skills, EAN International started to pay more attention to the needs and requirements of MOs from Eastern Europe. Some new initiatives started during his term: training programs for new MOs, mentoring programs and others. He supported strongly all the activities of the Eastern and Central European Region. His personal involvement and engagement caused that our region kept the seat in the MB for the next cadencies, and I had a chance and an honour to be his follower.“

Mr Ronnie Herzfeld, former Director of EAN South Africa, member of the Board of EAN International in the years 1996 – 2002: As a founder member of GS1 South Africa, which recently celebrated its 30th year of membership of the GS1 community, I extend my congratulations and my best wishes to GS1 Czech Republic on achieving their 30th anniversary. It has been my privilege to have been involved with this global organisation over a period of many years and during this time I have met many wonderful people. I was especially fortunate to have known and worked with a number of the executives of GS1 Czech Republic. GS1 Czech Republic is a stalwart member of GS1 and has made a significant contribution to the organization; I wish them every success for the next 30 years.

8. Barcodes in the domestic market

Since the eighties, the domestic products, marked by the standard data carriers, were destined for export to Western markets. The Czechoslovak consumers had faced the exotic technology by that time. The oldest cash desk systems on the basis of barcodes, however, were not installed in the foodstuffs shops and the consumer goods shops but in shops with cloths, home accessories and another range of goods. The first attempts to introduce commercial information system took place in 1976 in the cooperative commercial house DRUŽBA in Wenceslas Square, Prague (built in the years 1971-1975). However, the system was never put in operation because of lack of financial means for operating material; its function was limited only to the isolated cash desks. A barcode of another standard, different from EAN, was used for the identification of the goods. „The scanning was not done by the ray like today, but the codes were passed through by a laser pencil“, Mr Mádle said; he was one of the DRUŽBA department store officials since its solemn opening. „Each piece of the goods must have had its label but due to the fact that they were imported from abroad, a „sophisticated“ austerity measure was taken: the labels were stuck in a thick notebook and each one was used until the print completely disappeared. To choose a right label and to pass many times through the code, before the pencil registered it, did not bring any time savings by then...

Another important moment in the development of the automatic identification were the projects of the first department stores with modern cash desk systems on the basis of EAN barcodes. The Czech consumers could see the EAN barcodes, as an element of complex solution, in HOUSE OF ELEGANCE in the street Na Příkopěch in Prague. The importance of this pilot project using barcodes has not been fully appreciated so far, even in spite of the fact that (together with the project of norms using the EAN system) it was the first project in the countries of the Council of Mutual Economic Assistance (RVHP) and its goal was to be an example for its further implementation in the States of Centrally Planned Economy. What was its genesis like?

9. Standard EAN carrier in HOUSE OF ELEGANCE as an example for RVHP

The beginning of the IT development in Czechoslovakia goes back to the seventies. A kind of the „Czechoslovak Silicon Valley“ were two enterprises denominated by the abbreviations PVT and PORS. The State apparatus was served with information technologies delivered by the State enterprise Podnik výpočetní techniky (Enterprise for Information Technologies) and the entities of internal trade were served with information technologies by Početnická a organizační služba (Information and Organization Service). The huge organization of PORS rendered services for most of the commercial and production enterprises of the internal trade which did not possess a costly computer technology of their own: they processed the outputs for the enterprises starting from the raw materials circulation going through finances and ending with human resources. Mr Jaroslav Hilscher of PORS created communication sub-systems for main computers, and later he occupied the position of Operating Chief of Computer Center. For illustration: 3.500 PORS workplaces consumed 2.000 tons of paper a year to print sets of the internal trade. The enterprise having 4.500 employees used approximately 110 main computers and then disposed of equipment enabling the machine reading of documents written by hand. The EAN Director Mr Jaroslav Martinic founded in 1983 a working group of representatives of the manufacturing companies whose task was to meet the requirements of the Western export partners to mark the exported products by the EAN barcodes of domestic production. Also the Ministry of Domestic Trade, as the head organization of PORS, was involved in this group. At the same time, the group examined the possibilities of introducing the barcodes in the Czechoslovak Socialist Republic. Through Mr Jiří Bělobrádek, Head of Section at the Ministry of Trade, the group was linked up personally with the Czechoslovak Mission at the RVHP in the framework of which the Ministries of Trade of the associated countries cooperated. The Czechoslovak Socialist Republic as the first country of the socialist block, having experience with automatic identification, brought up this topic to the agenda of the Council of Mutual Economic Assistance. A Working Group for this topic was created at RVHP; Mr Jaroslav Hilscher was appointed its secretary: „Within this group, among other things, were coordinated plans for the production of technical equipment for retail trade as cash desks, weights and so on.“

(By that time, only two manufacturers of cash registers were active within RVHP – Bulgaria and the U. S. S. R.).

„Our main contribution was to develop and implement a pilot project of a department store“ continued Mr Jaroslav Hilsher. This task acquired the status of a grant awarded by the national authorities (in the terminology of those days: a State Research Task). HOUSE OF ELEGANCE, a luxury shop of imported fashion goods, was established in the representative building of 19th century in the center of Prague, in the street Na Příkopěch.

„The infrastructure of the project was the cash desk system of ADS Anker with sensor of barcodes ntermec“, Mr Jaroslav Hilsher explains; he was responsible for the system using the barcodes of the EAN standard. The realization of this solution lasted one year only: the project, which was about to become an example for department stores in other RVHP countries, was generously funded. The shop was opened on 1st July, 1985. The goods, which were not marked by codes during manufacturing, were marked by labels printed on the spot. The activities of the first modern retail shop on the Czechoslovak territory was over in 1990.

10. Infant years of EAN Czechoslovakia

The Czechoslovak representation in the organization EAN International belonged from the very beginning to the most active member organizations. In addition to the pilot project of pattern department shop using cash desk systems with the standard barcode, Czechoslovakia was charged in 1987 to prepare a system of norms for the EAN system and its involvement to the norms of RVHP countries. A handbook on using the barcodes was edited in the same year in 2000 copies. The publication written by Mrs Kristina Radníková and her team: “EAN code – application in the Czechoslovak Socialist Republic“ became an essential reference booklet for all enterprises producing for export. The history of the early stages of automatic identification by means of barcodes is above all the history of their manufacture. At that time, the advance guards of this process were the master printers. At the very beginning, the method of polygraphic reproduction prevailed in the manufacture of barcodes. The oldest barcodes Made in Czechoslovakia were printed from the filmmasters, delivered by the foreign business partners to the Czechoslovak exporters. Already at that time, the quality of print was very high. It was due to the national enterprise GRAFOTECHNA (nowadays GRAFOTECHNA PRINT) and the Research Institute of Polygraphic Technology. GRAFOTECHNA was charged in 1985 to act as technical guarantee for designing the packaging by the EAN barcodes. „Our task was to involve the Czechoslovak Socialist Republic in the EAN system as far as the technological aspect was concerned,“ Mr Zdeněk Indra, Managing Director of the company GRAFOTECHNA PRINT and member of the Committee GS1 Czech Republic, explains. „In the first stage, it was necessary to provide for imports of labels and filmmasters. In Europe, we searched for a supplier of suitable consumer material, as well as know-how,“ Mr Zdeněk Indra remembers. A touchstone of the quality of the print of barcodes was the manufacture of books with ISBN codes designated for foreign markets. The threat, that the whole bulk of the books would be sent back by the client, was the imperative necessity for the printers to check carefully whether the EAN symbols were printed correctly; paradoxically, the checks in the printing houses were more meticulous in the eighties than nowadays. All the printing houses, which carried out the printing of barcodes, were equipped with verification equipment. Some of them have been used so far. Later, the then Ministry of Industry, by the intermediary of Authority for Administration of Federal Material Reserves, tried to get independence on the importations of printing materials for barcodes from Western countries. The research ended in a deadlock by that time and so it was decided to resume the importations of labels from Germany. A turning point of the printing of barcodes was the year 1989 as the Czechoslovak Socialist Republic as the first country of RVHP started to manufacture filmmasters of its own. GRAFOTECHNA bought a photoplotter to produce filmmasters of the mark BCS; a computer and software of the mark IBM were imported secretly as a part of the equipment. The filmmasters were produced until 1997 as they were replaced by new technologies.

11. Standardization and Enlightenment

Just as today, even thirty years ago, the schooling was the basis for the activity of a standardizing organization. These activities were developed in the field of cultivation of the markets and the schooling of the population on advantages of standardization, automatic identification and later, on



other solutions taking advantage of standard information understandable to everybody regardless of the territory or cultural background. By that time, the most efficient way of enlightenment were the direct meetings. Mrs Jana Váňová participated in business trips with the purpose to promote the system; nowadays, she occupies the position of commercial manager in GS1 Czech Republic: „Above all, we attended the Brno Trade Fairs, particularly EMBAX-PRINT and the SALIMA FAIR where we promoted the EAN system in our stand. We had chats with occasional visitors or we had meetings after previous agreement. On the other hand, the INVEX EXHIBITION was attended by our colleagues to get acquainted with new technology.“

„We succeeded in convincing a great number of interested people,“ Mrs Váňová continues. „A number of people could see a future for automatic identification. Thanks to these activities, it was not difficult to meet the requirements when the automatic identification later achieved a massive increase in demand.“ The Center EAN Czechoslovakia succeeded in creating a solid awareness of the future necessities of the market for automatic identification by the time when a swift handling of mass influx of consumer clientele at the cash desks was the music of the future. The officials of EAN Czechoslovakia succeeded in maintaining solid awareness of the actual development by means of their participations in West European events and fairs, for example in Scan in Paris and in Düsseldorf.

What kind of arguments did the promoters of the EAN system use among the Czech enterprises? „We were aware of the development abroad. We did not have any doubts that the system of automatic identification would spread throughout the Czech market, too. By that time, a great number of Czech manufacturers felt that a condition to survive on foreign markets was marking of their products with barcodes“ Mrs Váňová answers. In her mind, many enterprises were very farsighted. Although at that very moment they could not make use of the automatic identification system, they took an active interest in its implementation. The future was important for them. „I remember the representative of the enterprise Astra Diu Jevíčko who asked me at one of the presentations whether it has any sense to mark their goods with the EAN barcodes if they exported their articles mainly to Africa. „I convinced him it has,“ Mr Zdeněk Indra remembers. „After some time, this gentleman addressed us stating keenly that their enterprise had been introduced successfully at a Fair in Western Europe where they faced the condition to mark their goods with barcodes.“

While later the firms were forced by their clients to implement automatic identification and data capture, at first there was a mixture of incentives why to decide to get involved in in the EAN system. It was a matter of prestige or a matter of a good marketing to have the barcode on my goods. Among the first one hundred companies for example appeared the manufacturer of feed for rodents and for their supplier Zverimex.

FROM „TECHNICIANS“ TO ACCREDITED PARTNERS

Another important activity of EAN Czechoslovakia from the point of view of the broadening of automatic identification was the cooperation with the emerging technologic companies who imported equipment for the production of labels with barcodes (the company GRAFOTECHNA lost its actual monopoly in this field in 1990), as well as equipment for decoding. The officials of EAN Czechoslovakia organized special exhibitions where they enabled the technical firms to present their offers. At the same time, they advised the public whom to address in order to introduce the system for automatic identification and where to find technical assistance. This was the origin of the system of accredited partners of GS1 Czech Republic and this was a service for intermediating the contacts with selected suppliers in each and every region.

12. Norms for EAN system

The system of the EAN barcodes was introduced in the Czechoslovak Socialist Republic when the Czechoslovak Commercial and Industrial Chamber (ČSOPK) joined the international association EAN International in 1983. The normalization activity started at the initiative of Mr Jaroslav Martinic at the EAN Methodical and Technological Center acting within the activities of Authority for Administration of Federal Material Reserves (SFHR). A group of officials of ČSOPK and SFHR started to translate the documents according to the specifications of EAN International. In addition to Mr Jaroslav Martinic and Mrs Kristina Radníková (who was the team leader who published in 1987 the first reference book-

let on EAN codes in the Czech language in 2.000 copies), Mrs Renata Kupová (SFHR), Jana Lukešová (IMADOS) and Mr Petr Wallenfels (ČNI, nowadays UNMZ) participated in the preparatory works. This publication and also Specification of EAN International, as well as the German DIN norms were used later for the preparation of the norms (ČSN) for labelling of the goods by the symbols EAN-13 and EAN-8 on packaging of consumer trade items and trade item groupings, data structure of the symbols, technology of print, problems of reduction of symbol lines and for the other conditions, the observation of which was necessary to get the correct function of the barcodes. Of course, the norms were compulsory, which was a positive moment regarding the situation on the market. The norms rendered the orientation in the given topics simpler and they induced especially the enterprises introducing goods on the market to label progressively their goods by barcodes.

With a view to the fact that the techniques of introducing the barcodes on the goods were directly linked with wraps, the preparation and the discussion on the draft norms was carried out within TNK 78 OBALY CZECHOSLOVAK STATE NORMS. By that time, the Chairperson of this Commission was Mrs Jana Lukešová (IMADOS, s. p.) who supported the normalization activities in cooperation with the chief guarantor Mr Jaroslav Martinic (EAM Czech Republic) and Mrs Renata Kupová (SFHR). In the second half of the eighties, there was a question of introducing the EAN system within the environment of RVHP. The overwhelming majority of the goods in the shops and in the department stores came from the RVHP countries and so it was necessary to seriously consider the introduction of the marking of the goods with the barcodes of the EAN system both in the manufacture and on the counters of shops. That is why when discussing the plan of works towards normalization within RVHP, at the initiative of Czechoslovakia a normalization task was put forward to take an interest in the scope of problems of the EAN system. The compulsory draft norms ČSN were a basis for the approval of the works towards normalization. The RVHP council approved the given task, including the responsible country (Czechoslovakia). „Mr Jaroslav Martinic suggested creating the RVHP norms. The reasons were simple. He was afraid that another country within RVHP might have prepared norms not corresponding to international specifications“, Mrs Lukešová explains. The team led by Mr Jaroslav Martinic, as the holder of the National Research Task, translated and worked out and prepared the first bulk of proposals of the RVHP norms to be discussed. „In keeping with the expectations, the process of discussing the norms was complicated because the representatives of the working groups of other RVHP countries interfered in it. Our endeavour was not to recede and to keep strictly up to the specification of EAN International which was a success. The norms were approved as we suggested“, Mrs Jana Lukešová states. The preparation of the norms lasted for more than two years. The first norms consisting of sixteen pages defining the scope of automatic identification by means of the EAN symbols were edited in the second half of the year 1987. It is necessary to remember that the introduction of the international norms was very difficult, nevertheless their use and implementation within the RVHP norms was one of the practicable ways. And it was successful in this very case. In parallel with this activity, the preparation of the barcodes started in the practice. The Ministry of Industry had the opinion that as priority textile products should be marked with barcodes, however Mr Jaroslav Martinic preferred the products of food industry. Following the practice of the market economy countries, at the beginning, the automatic identification actually expanded mostly in the sector of food products and it was applied to consumer goods and clothing somewhat later, i. e. at sector level“, Mrs Lukešová continues.

13. Joining the European Committee for Standardization

After the year 1989, when a short period of the recession was over, the situation changed. Under the new Law No. 22/1997 of the Collection of Laws, on Technical Requirements for Products, the technical norms became voluntary norms. However, there is an unwritten law that the norms are, up to a certain degree, a part of legal consciousness of every country, they are a basis for knowledge and they help and influence decisions. This is true also for the sphere of data exchanges to where the barcodes belong. For example, if any country decides to use, in the framework of open society, the EAN/UPC barcode, this very country must obey the respective international specification or the European (eventually national, if implemented) norm.

Since the year 1997 the Czech Republic has become a full-fledged CEN member (European Commit-

tee for Standardization) and later also a CENELEC member (European Committee for Electrotechnical Standardization). It meant for the Czech Republic to modify the system of cooperation and to adjust the organization of the technical normalization to the new conditions on the national level.

In 1993, TNK 42 – Exchange of Data was founded within ČNI (Czech Normalization Institute) as its advisory body. Mr Petr Wallenfels became its first chairman. The goal of this Commission was everything which was linked with the contents of the information system, i. e. everything linked with the data, namely with their identification and definition of data elements, metadata, elaboration, security and the like. The activity of this Commission was based on two projects. The first one came from the Czech Republic – Uniform Data Basis – and the second one was based on the UNO activities – EHK WP 4 – to facilitate procedures in the shops, the project EDIFACT, the Electronic Exchange of Data for Commerce, Administration and Transport, as well as the norms which were drawn up by ISO/IEC JTC 1 for this sector. A part of these projects and norms was the identification of the entities, including the identification of the product and the goods by means of the barcode. For these reasons, the problems of the barcodes were shifted from TNK 78 Obaly (Packaging) to TNK 42. Mr Vladimír Škulěty became a member of this Commission on behalf of EAN Czech Republic and Mrs Ing. Jana Lukešová on behalf of MSB Logistic.

With a view to the broad scope of the topics solved at TNK 42 – Exchange of Data, at the initiative of Mr Jaroslav Martinic, the Working Group Barcodes was appointed, the members of which were the expert officials of EAN Czech Republic: KODYS – Ing. Vonásek, ESP, Limited Liability Society – Ing. Pištořa, Uni-Code – Ing. Marek, ICS – Ing. Cepník, MSB LOGISTIK – Ing. Lukešová, GRAFOTECHNA – Ing. M. Bašus. Under the leadership of Mr Jaroslav Martinic the Working Group met as needed and necessary to discuss and prepare the points of view on different draft international norms, as well as on the norms implemented in the ČSN system of norms. Mr. Ing. Petr Wallenfels participated in the activities of this Working Group on behalf of ČNI. As far as the international cooperation in the sphere of the barcodes is concerned, the activities of TNK 42 are oriented particularly to ISO/IEC JTC 1/SC 31 Automatic identification and technique of data collection, in which the Czech Republic is a member.

The broadened international cooperation meant for the Czech Republic to become a CEN member, namely in the Commission CEN TC 225 AIDC Technology. Over time, the activity of the TNK 42 Working Group for Barcodes was limited. After the extinction of the Czech Normalization Institute the national normalization organization was included in ÚNMZ (Office for Technical Normalization, Metrology and State Testing; then the cooperation in the field of barcodes was fully resumed. GS1 Czech Republic is represented in TNK 42 by Mr Michal Bílý who coordinates the national normalization activities within ISO/IEC JTC 1/SC 31 a CEN TC 225. And also he participates significantly, together with Mrs Ing. Jana Lukešová, in implementing the international norms in the Czech national environment. Their activity includes discussions on draft international norms and the preparation of the respective points of view.

14. UCC + EAN = GS1

An important milestone was the partition of EAN Czechoslovakia after the year 1993. The Czech Republic kept up its national prefix 859; the entities registered in the Slovak Republic started to mark their products with the newly assigned symbol 858. By that time, the International Board of EAN International had 23 members, nobody else but the representatives of the Western countries. Mr Jaroslav Camplík was elected as the first member from an Eastern and Central European Country in 1997. By that time, a vast project was prepared to unite the North American organization UCC with EAN International. Already in 1990, both the subjects had signed an agreement on their cooperation which formalized their intention to administrate together the global standards.

The main goal was to facilitate trade with North America. The American side was not able to accept the worldwide 13-digit identification of items. The foreign partners had to re-mark costly all the products destined for export to the United States of America and Canada by 12-digit codes. The import of North American products was carried out without complications, because the cash desks were able to decode the UPC structure. In 1998, UCC undertook to accept the 13-digit EAN codes and to pass progressively on to the EAN nomenclature and the identification structure. „As EAN Czech Republic, we actively supported the union between the two subjects. It took many years to persuade the American part to get united. By strengthening the international commercial exchanges, particularly between the U. S. A. and the Latin American countries who used the EAN system, the existence of the two mutually incompatible systems was not sustainable in the long run,“ Mr Jaroslav Camplík remembers.

The long-term process of unification of the two institutions was crowned by the union of the two systems. The new global standardization organization got the name GS1, i. e. Global System One. Starting on the day of unification, all the parts of the global standards for identification and communication are called GS1 system. One year later, Mrs Pavla Cihlářová was Mr Jaroslav Martinic's successor of in the leadership, after 22 years of his delegation.

PARTITION OF EAN CZECHOSLOVAKIA

On 1st June, 2013, 20 years elapsed since the chairman of the Slovak Office for Administration of State Reserves Mr Peter Ryška had founded the National Center EAN Slovakia. This was the first step for the Slovak Republic to become a full-fledged member of EAN International (the Czech Republic became member automatically after the split of Czechoslovakia, as successor member). It was the beginning of the negotiations on the division of the property and the documents of the Center for Administration of EAN system, which was a part of Authority for Federal Administration of Material Reserves of the Czech Federal Republic. Since that day, the negotiations with the Brussels Central began on the approval of Statute of the national organization and on the mutual rights and obligations between the successor organization in the Czech Republic and the newly constituted counterpart in the Slovak Republic. After a number of negotiations between the directors of the national organizations Mr Jaroslav Martinic and Mr Miroslav Štaffen and after the consultations with EAN International, an agreement between the two partners was approved. The Czechoslovak prefix 859 remained to the successor organization, i. e. the Czech Republic, and the Slovak Republic got a new prefix, i. e. 858; the Slovak firms could have used the prefix 859 till the end of 2005 or till the depletion of stocks of packages. A part of the agreement was the division of the membership fees.

15. Modern retail trade expands

Let us go back to the eighties. Mr Jaroslav Hilscher, one of the founding fathers of the first cash desk systems on the basis of the EAN standard installed in HOUSE OF ELEGANCE, was the author of the introductory studies to other projects, some of which were not ever completed because of the change of the regime in the country. At the same time, the development of the Czech cash desk systems was over (in the enterprise ZTS Banská Bystrica). The opening of the markets rendered the importations of advanced equipment of Western provenance possible; for example, the systems of the mark IBM were installed in the department store RŮŽE, in the southern district of Chodov in Prague.

When the first projects of the retail shops with the automatic cash desk systems, managed by the State, were stopped, in the sphere of automatic identification came a short transitory period in which the new private retail trade entities introduced the complex cash desk systems sporadically. The massive expansion of the EAN barcode in retail trade started on the turn of the years 1991-1992.

The first scanning of the EAN-13 barcode on a food product was carried out in the department store PRONTO. At the solemn opening of the reconstructed supermarket PRONTO – Smíchovská tržnice (Smíchov market) in Prague in 1992, the company verified the reality of their own marking of the goods by the EAN code. The number of the offered products marked by the EAN code was low, and also the quality of the marking often was unsatisfactory. „That is why the officials of the supermarket were obliged to require during the buying negotiations to mark the deliveries of the goods or to mark the goods directly in the department store which required an increase in labour and costs,“ Mr Jiří Včelák from the company PRONTOPLUS remembered in 1998. The low ratio of the products marked by the barcodes was a problem at the beginning. For example, the supermarket SIP hired students who by nights stuck labels with the barcodes which on the following days could be sold. However, the ratio of the goods marked with the EAN barcodes increased quickly, although still in 1994 the additional marking of the goods directly in the department stores was a frequent phenomenon. In 1998, the ratio of the marked goods represented already more than 90 %.

Mr Jan Příhoda, Director of the company KODYS, remembers the start of the automatic identification: „My first private experience with the automation of sales was the opening of the DELVITA department stores in the Czech Republic. On the goods there were stuck labels showing not a price but a 4-digit identification code of the goods. The cashier did not mark the price, but she introduced the codes of the goods and the price was automatically found according to the code of the goods. This manual

system was only a small step to the classic machine reading of the EAN-13 and the EAM-8 barcodes by means of the counter cash desk readers of the barcodes.“ The first major project, in which Mr Příhoda participated in person, again concerned the retail trade. „It was a project the goal of which was to follow the movement of the goods in the shop for the client K-Mart (this company operated, among others, the department store MÁJ, nowadays TESCO MY). It was one of the first major projects in the Czech Republic, for which the mobile terminals for these operations were used, back then without the possibility of online wireless transmission of data.

The first Czech hypermarket was opened in the town of Ústí nad Labem in 1997. Its sales area was 7.534 m² and it was equipped with 22 cash desks.

The development of the automatic identification had a great dynamics at the end of the nineties. The boom of the automatic identification on the basis of the standards of the EAN system was naturally reflected by the manufacturers/suppliers.

16. Standardized identification and support of logistic processes

In the years 1997 - 1998, the process of automatic identification was carried out in the Czech Republic, which had no precedent as far as the extent and innovation range were concerned. The goal of this project was to implement the identification of products on the level of pallets and monitoring of the goods beginning from raw materials up to the final products in the network of eight enterprises of the company ČOKOLÁDOVNY, S. A., (by that time, it was the joint venture of the companies NESTLÉ and DANONE). Only fifteen years after the implementation of the EAN system, we succeeded in progressing from the simple identification of products for commerce up to the sophisticated solutions for monitoring - and as we are going to see later - including for the electronic data exchange.

The chain of suppliers was managed in the company ČOKOLÁDOVNY completely by the company NESTLÉ, which used the information system NeCom (Nestle Commercial) by that time. In the framework of this information system, a new sub-system for managing the store was introduced, i. e. DIS (Distribution Inventory System), which enabled to distribute the whole stock to the individual pallets. The main information medium of the system was supposed to be in the Czech Republic the logistic pallet label according to the standards of the EAN International applying the 18- digit SSCC code, up to that time not used, which is unique worldwide. „The project consisted in applying intralogistic processes in the manufacturing plants, as well as the information system so that it would be possible to use the standard,“ Mr Stanislav Lego states; he was responsible for the project in his capacity of Manager of Logistic Services in the company ČOKOLÁDOVNY.

A motivation to implement this project was the endeavour to use more precise information on the goods in stock. The factor of the same importance was the monitoring of the production. „By implementing the pallet labels not only for finished products, but also for raw materials and for intermediate products, we were able to determine exactly which raw materials got in the product.“ The project provided for an exact identification of a concrete pallet and in case of any emerged problems it enabled to provide for concrete components or packages. Only fifteen years after the implementation of the EAN system, we succeeded in the Czech Republic in surmounting the simple identification of products for commerce by the sophisticated solution for the monitoring and for electronic data exchange.

The monitoring was completed to include the level of expedition in the central distribution stock, namely both in case of homogenous pallets and in case of heterogeneous pallets (i. e. it was possible to determine from which homogenous pallets they were assembled and to which client they were delivered). The goods from eight plants used to be sent to the distribution stock, the identification system of the pallets was implemented in all of them.

17. Implementation of automated hardware for stocks

The pilot project, which was introduced later to the other plants of the company ČOKOLÁDOVNY, was carried out in the largest enterprise of the company, i. e. in OPAVIA, in the town of Opava. In spite of the large extent and innovation range of the project, its implementation took a relatively short time:

all the enterprises marked the pallets by the logistic labels as soon as eighteen months after the initial study was launched. At the same time, the project meant to undergo large interventions from the point of view of hardware, including the construction of one of the first automated stocks in the Czech Republic: a six-store stacking system with unattended truck of the type shuttle was installed in OPAVIA.

The logistic label was absolutely new not only in the Czech Republic, but throughout Europe. There were few places where it was possible to get acquainted with this system.

„The first one of the enterprises where we could acquire the necessary know-how was the plant NESTLÉ in the Netherlands which produced nuts bars. The global standard was introduced in this plant because of the necessity of monitoring the raw materials, namely the nuts which more than the other components are susceptible to be contaminated by toxins.“

Mr Stanislav Lego explains. „We studied the second realization in Great Britain, in a factory in the town of Belwin. The plant General Cereal Partners produces there cereals of the mark Nestlé for the markets throughout Europe.“ According to Mr Stanislav Lego, the system of the automatic identification was brought to perfection there: through the worker appointed for the task by scanning the barcode from his safety helmet was assured a high productivity of work: at the same time, the plant increased the data collection with a view to better operative performance.

The association EAM Czech Republic, embodied in the person of Mr Jaroslav Martinic, provided for know-how to define the logistic label corresponding to the global standard.

18. Development of electronic data interchange (EDI)

The first initiatives to develop the electronic data interchange appeared as early as 1989 on the FITPRO platform (the Czechoslovak organ, respectively the Czech national organ for facilitating procedures in international trade, registered by the U. N. O.). The first serious considerations on the implementation of EDI of modern type appeared in 1996 (from the point of view of communication in FMCG); one year later the first real production communication was realized. „From this point of view, the company Procter and Gamble was the first supplier in 1997 as their orders for goods contained the terms and conditions which implied to implement EDI,“ Mr Milan Mikula, Solution Manager of the company EDITEL CZ, explains and adds: Among the chain stores, such a company was MAKRO who introduced EDI in 1998 in the framework of the realized cross-docking concept, together with the company HOPI.“ The chain stores are primarily oriented to efficient use of labour and to bring the highest added value possible. „I think that this very principle was decisive for the implementation of the electronic data interchange. This removed the manual work necessary for orders sent to suppliers by fax or by mail. The chain stores started to plan more efficiently the logistic of supplies of goods, and last but not least, they accelerated the payments for goods,“ Mr Milan Pavlík, Training and Business Support Manager of Tesco Stores Czech Republic, explains who was responsible for the project of EDI implementation in the company MAKRO: „Technically, it was necessary to create protected channels through which the documents flowed between the commercial partners, and to prepare a solution so that the commercial systems would be able to make themselves understood. An important role played here the standardization of communication worldwide. One of the first implemented communications were orders and the so called inventory reports (i. e. reviews of stocks).

By that time, no available complex solution of electronic communication was on the Czech market. „We entered an unexplored land of the world of electronic business communications,“ Mr Milan Pavlík remembers. „At first, we had to understand the meaning and structure of the whole EDI communication. The first reporting and communication programmes were created by IT department of the company. At this stage, we got an important assistance by our colleagues from the company EDITEL and the Czech officials of EAN.“

In addition to the decreased costs of labour and communication, Mr Pavlík appreciates the velocity and preciseness of communications sent which were the main benefits of this project. The employees could devote more time to the fulfilment of clients' requests instead of necessary administration of orders, reports and delivery notes. As a numerical expression of savings, one up to two hours were saved of the working time of two employees. The problem of unreadability of fax news, as well as mistakes committed by inexact copies of paper reports disappeared. At present, we can hardly imagine another

way of communication with our partners, but EDI communication. Although in individual cases we still fight with the idea that a copying machine and e-mail are the most efficient ways of communication," Mr Milan Pavlík concludes."

The main conditions for launching the EDI communication was the legislation framework for sending mutually recognizable documents among the entities of the market. An important move was the full-fledged electronic invoicing implemented in 2002; nothing could hamper the implementation of totally paperless EDI invoicing.

19. New sectors and new solutions

Approximately at the same time when EAN Czech Republic edited the first EDI/EANCOM manual together with subsets for selected electronic communications (1995) and when the logistics and distribution entered the sectors, the standards of UCC EAN started abroad their expansion into the public health sector.

We shall make a stop here for a while. In 1999, the laboratory Auto ID Centre was opened in Massachusetts Institute of Technology (MIT), where the standard EPC was developed, destined for automatic identification on the basis of RFID technology. In the same year, the specification of the new barcode GS1 DataBar was approved; it was the first new carrier after the implementation of UPC codes, respectively EAN codes destined to the places of sales (the so called POS, i. e. point of sale). The first two-dimensional symbol of the systems GS1 - GS1 DataMatrix which was implemented above all in public healthcare as an efficient means for the unique identification of medicines and medical instruments and equipment. The importance of the carrier is strengthened by the growing pressure to serialization of medicines as the most efficient way of battle with counterfeits. One year later, the system GS1 was enriched by another key element - a network of data synchronization (GDSN) which means on-line solution enabling the commercial partners to share efficiently master product data. Soon, a set of standards to provide for monitoring of products was created, the family of data carriers was broadened by adding other symbols, and the System GS1 entered other sectors, including the world B2C.... How was this development reflected in the Czech Republic?

GDSN

In 2010, an agreement on providing GDSN services for the Czech market was signed. Five years later, the pilot project was launched, the goal of which was to test the selected certified electronic GDSN catalogue and the correctness of the created GDSB profile for Czech Republic. Five large chain stores and nine suppliers participated in the testing. The representatives of the participating companies shared the preparation of the profile and the pilot project in the framework of the GDSN group, which was established in Summer 2015. During the realization of the pilot project, the suppliers had a possibility of recording the Master Data of some of the selected products into GDSN, from where the clients could download them to check whether the data sent in this way are suitable for them. After completing the project, everything was assessed in a way that eventual defaults could be corrected. The GDSN full operation was launched in January, 2017.

POSTSCRIPT

Fifty years ago, a revolution started in retail trade which turned the old system inside out. The implementation of automatic identification by means of the standard barcode rendered the error-free scanning of the prices of products possible, which previously was unthinkable without a demanding and fastidious manual labelling of every single product, done by attaching a price tag and its protracted manual price marking. Nevertheless, this is far from being all: the automatic identification by means of the UPC symbols and their subsequent European counterpart EAN (1976) laid the groundwork for further sophisticated systems which helped develop the international trade and the significant increase in efficiency of supply chains. The marking of the commercial and logistic units enabled to computerize the warehouse management, the implementation of the electronic data interchange among the commercial partners (EDI), the creation of the systems for demand prediction, or the solution of the automatic monitoring of the goods. Nowadays, the barcodes help the retail traders prepare efficient promotions, new space-efficient carriers destined for payment terminals containing larger data capacity,

the GS1 DataBar. In addition to the unique number of the commercial items, they can bear some other information, such as recommended date of consumption. The latest trend is to provide for extended product information to the end consumer, equipped with a smart phone containing an installed reader of two-dimension symbols (the GS1 DataMatrix, the GS1QR Code).

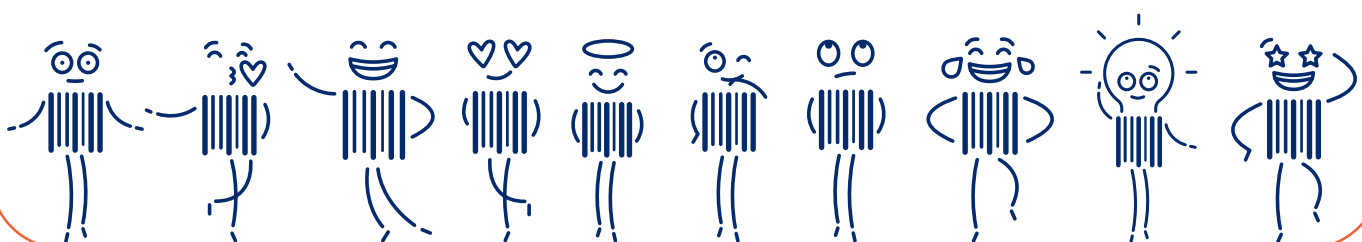
The development is complex: while in 1969 a self-adhesive label with a barcode had to be printed in an IBM laboratory to mark a packet of cigarettes, the present printing technologies enable to print the barcodes right to the packaging of any product, regardless of whether it is paper, cardboard or pasteboard, plastic material, glass or metal. The same is true for the hardware for decoding symbols and for the data transmission or data processing.

In 1969, the goal of the developers was to scan simultaneously the barcodes at fifteen cash desks, nowadays we can find in the world supermarkets equipped with about two hundred cash desks scanners, through which pass more than 3.000 products a minute. The savings that the barcodes bring for retail trade are impressive. For example, in France thanks to the implementation of the barcodes of the GS1 system, about 11 billion EUR are saved every year. The barcodes brought a similar effect outside the retail trade, too. The barcodes have been implemented in most industrial sectors, in agriculture, in public healthcare. Above all commerce, however, is at the top: up to 6 billion transactions a day are realized by means of the barcodes! During forty years, the barcodes have been extended in more than 110 countries of the world. According to conservative evaluations the barcodes of the GS1 system mark more than 50 million different products delivered by more than one million companies worldwide; they are scanned every day in more than 500.000 retail stores of all sizes and formats.

After more than thirty years of the existence of the Czech representation in the global organization EAN, respectively in GS1, we stand on the threshold of a further development of the standards to witness their implementation in some new sectors (nowadays, it is above all the sector of public health care, but we have registered interesting applications worldwide also in a number of other sectors, for example in financing, agricultural production or public sector). And we enter the sphere of digital commerce. The digital world of the commerce cannot do without quality unambiguous identification in the global standard. Regardless of the industrial sector or the commercial application – wherever information in the environment of an open system is exchanged, there is a need of high range of interoperability, consequently including the standardization and globally convened rules. The GS1 identification keys serve to distinguish the items in the concrete supply chains, on the shelves of stores, in warehouses, in industrial workshops, in cargo spaces of the trucks, ships and aircraft, but also in services, in commercial processes, in documents...

The GS1 system has got a number of possibilities how to coordinate further necessary data and the basic stones of identification, how to treat specific information, how to provide for transmission of such information among the commercial partners and up to the end consumer.

The same is true for the identification of products in the environment of internet (for example, in e-shops or in the finders of the goods). After forty years of its development, the GS1 system got into a new era: it has helped the business partners communicate: The client has had an indirect advantage: he has got his cheaper and safer product more quickly and more comfortably. Now he has become master of the situation: he may scan the barcode himself with his phone and he may get immediately the necessary information, for example, to verify the origin of the meat he thinks to buy.



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