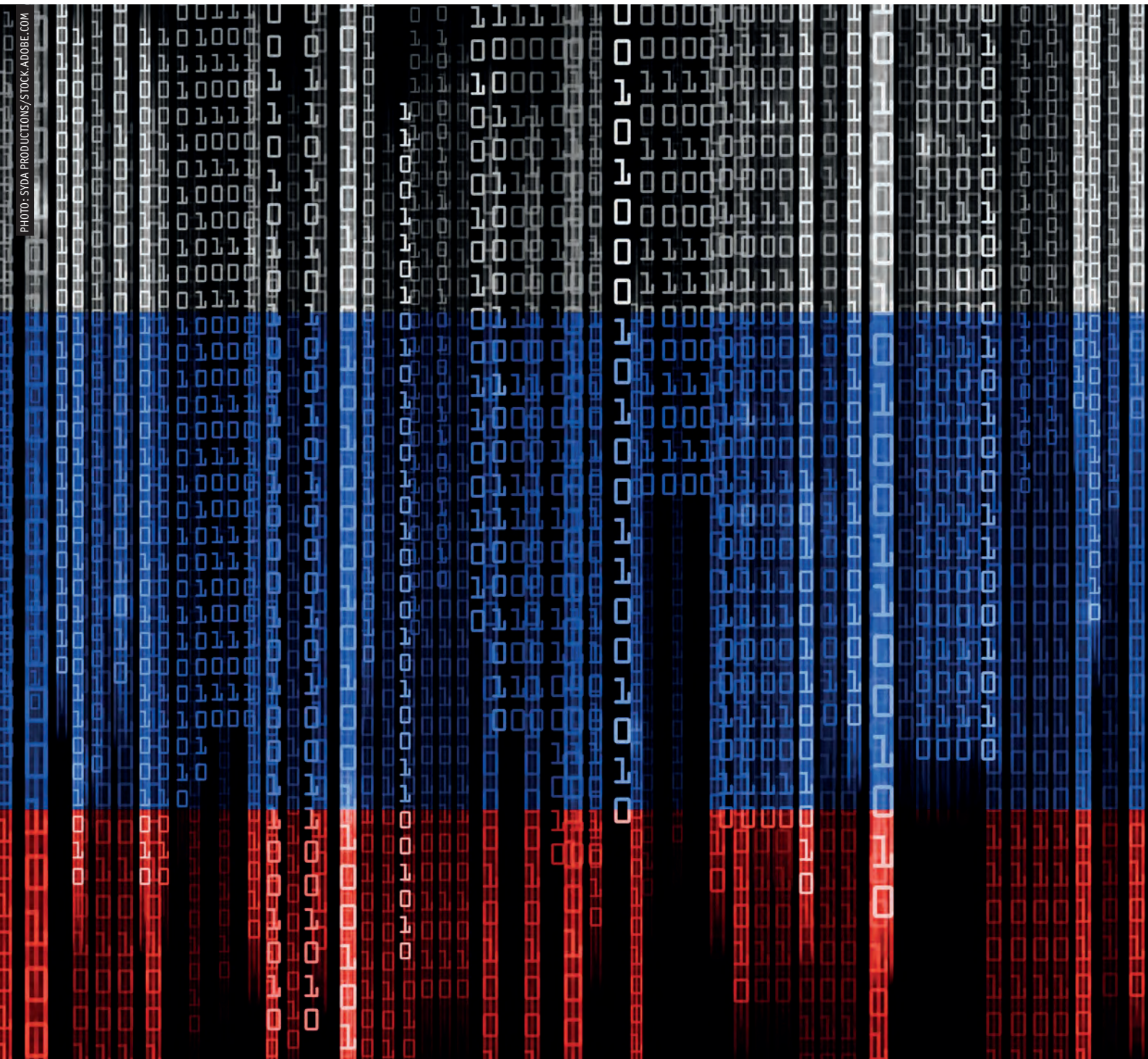


# The Russian Crypto Code Law: Are you ready?

Facts, solutions & checklist

Version of 1st April 2020



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**The white paper is intended for:**

Managing directors, plant planners, purchasers,  
production managers, sales managers

**Primarily addressed sectors:**

Pharmaceuticals, cosmetics, food

**Target:**

For all levels of knowledge

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## Executive Summary

Companies which operate in Russia or export to Russia, face a big challenge: So far, eight important product groups such as nosology medication or perfume have to be marked on secondary and tertiary packaging with a newly developed crypto code and registered on a central digital platform called Chestny ZNAK. Russian legislation is also stipulating mandatory recording of all products until 2024.

This white paper shows which regulations already apply, which laws are to be imminently applied and which details have to be observed for individual product groups. Furthermore, the white paper also clearly explains how the crypto code works and how companies implement it in their workflow, from registering with Chestny ZNAK to requesting the code through to serialization.

As a world-leading provider in the field of track and trace, Laetus supports its customers with all technical questions relating to crypto legislation and during all stages of the process chain. For this purpose, the company carried out test runs at an early stage under laboratory and practical conditions and offers diverse and powerful solutions for your entire process chain.

## Attention! Stricter labeling requirements in Russia

Since 2019, the new crypto code law has been in place in Russia, which prescribes the extensive serialization of numerous product groups. The first step was the seamless tracking of fur goods from June 1, 2019, however in the meantime products such as tobacco products and selected medication are also included. The expansion to include all goods stored, transported and handed over in Russia is planned by 2024.

### Key battle against counterfeiting

Companies which manufacture, provide or import goods to Russia must now use a so-called crypto code.<sup>1</sup> This is to be printed as a 2D data matrix code on all secondary and tertiary packaging of the legally defined product groups. Declared aim of the battle against counterfeits through transparency and tracking along the entire supply chain: Russian customs statistics show over ten million counterfeit products in 2017 alone.<sup>2</sup> Indeed, the potential damage ranges from financial losses to a decline in consumer trust due to counterfeit products with poor “quality”, through to health damage caused by contamination of drugs, cosmetics or foods.

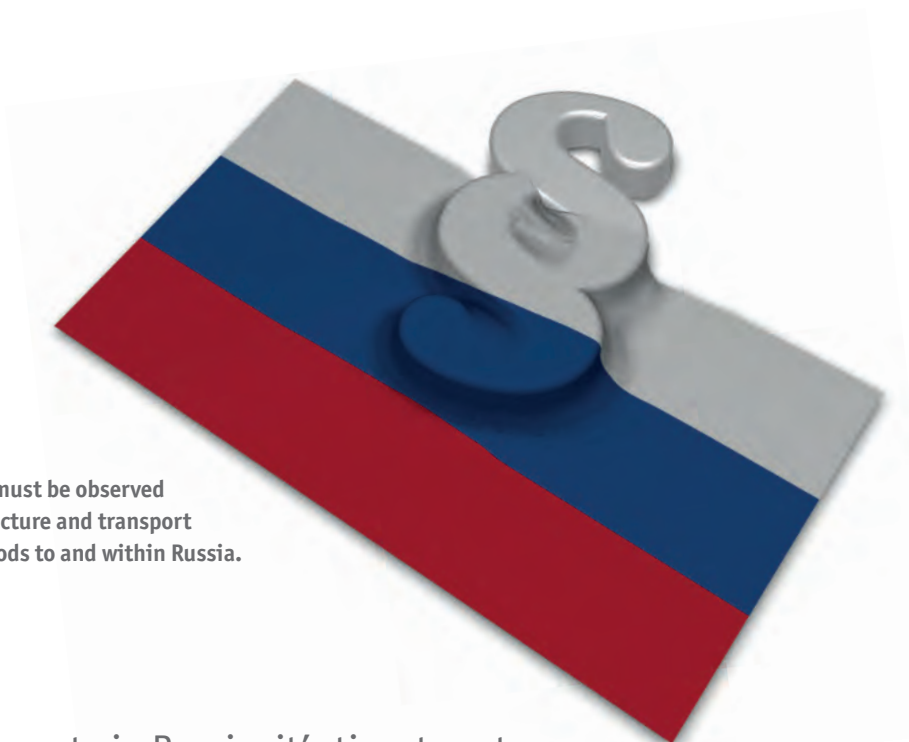


PHOTO: JRO-GRATIK/STOCK.ADOBE.COM

**Many new regulations must be observed for the manufacture and transport of goods to and within Russia.**

### For those who operate in Russia, it’s time to act now

In addition to international manufacturers with on-site production or sales organizations, contract manufacturers and pure exporters are also affected. Violations can result in fines and possibly being prevented from accessing to the important Russian market. According to the Directorate General for Trade of the European Commission, the Russian gross domestic product (TRADE) was 1.335 billion euros in 2018.<sup>3</sup> In the same year, exports from the EU to Russia totaled 168 billion euros.<sup>4</sup> Companies which sell perfumes and fragrances in Russia must anticipate the solution of software and hardware to add the crypto code process on their production line, in order to be compliant to this new regulation.

<sup>1</sup> Based on pharmaceutical industry example: Government of the Russian Federation, Decree 1556: [https://chestnyznak.ru/upload/iblock/6ef/DECREE\\_1556\\_On\\_Approval\\_of\\_the\\_Regulations\\_on\\_the\\_System\\_for\\_Monitoring\\_of\\_Flow\\_of\\_Medicinal\\_Products\\_for\\_Human\\_Use.pdf](https://chestnyznak.ru/upload/iblock/6ef/DECREE_1556_On_Approval_of_the_Regulations_on_the_System_for_Monitoring_of_Flow_of_Medicinal_Products_for_Human_Use.pdf)  
<sup>2</sup> World Trademark Review, Procedures and strategies for counterfeiting. Russia: <https://www.worldtrademarkreview.com/anti-counterfeiting/procedures-and-strategies-anti-counterfeiting-russia-1>  
<sup>3</sup> TRADE, Russia: [https://webgate.ec.europa.eu/isdb\\_results/factsheets/country/overview\\_russia\\_en.pdf](https://webgate.ec.europa.eu/isdb_results/factsheets/country/overview_russia_en.pdf)  
<sup>4</sup> TRADE, European Union, Trade in Goods with Russia [https://webgate.ec.europa.eu/isdb\\_results/factsheets/country/details\\_russia\\_en.pdf](https://webgate.ec.europa.eu/isdb_results/factsheets/country/details_russia_en.pdf)

## The new Crypto Code Law

On December 31st, 2017, the Russian President Vladimir Putin signed the Federal Act 487-FS<sup>5</sup> and in doing so initiated the development of a uniform system for extensive marking and tracking of goods.<sup>6</sup> The implementation measures were specified in government resolution 791-r on April 28th, 2018<sup>7</sup> as well as successive and further acts for individually affected sectors. The Center for Research in Perspective Technologies (CRPT)<sup>8</sup> was commissioned as the project manager.

### A central platform

To fulfill this task, the CRPT developed the so-called crypto code and, as the digital hub of the system, the Chestny ZNAK platform (Честный Знак; Eng. “honest knowledge”).<sup>9</sup> The CRPT generates and transmits the crypto code, assumes responsibility for managing the recorded data and defines various transition periods for the individual product groups, e.g. perfumes and fragrances.

### The Crypto Code: More complex than anything to date

The crypto code ensures tamper-proof marking of each individual product through the interaction of two components: The first part is the identification element, which consists of the globally unique Global Trade Item Number (GTIN; GS1 data identifier 01) and the serial number (21).

The second part is the verification element. This consists of a four digit alphanumeric crypto key (91) as well as the 44-digit crypto number (92). Contrary to earlier plans, the length of the crypto number was halved compared to the earlier 88 digits in a government resolution on August 11th, 2019.<sup>10</sup>

Identifier	AI	Format
GTIN	(01)	14 digits, numeric
Serial number	(21)	13 digits, alpha-numeric
Crypto key	(91)	4 digits, alpha-numeric
1Crypto number	(92)	44 digits, alpha-numeric

Mandatory elements of the data matrix/crypto code.<sup>11</sup>

The verification element functions as a checksum and is based on fixed mathematical parameters which are generated for exactly the respective GTIN and serial number. The given pattern also enables sales outlets without an Internet connection to check the code prior to handing over goods.

The legislator determines the price for requesting crypto codes. The price per generated code is currently 0.50 rubles excluding sales tax (1 ruble is currently around 0.012 euros).

<sup>5</sup> Legal text in Russian: <http://static.kremlin.ru/media/acts/files/0001201712310022.pdf>

<sup>6</sup> Chestny ZNAK, Why is the Chestny ZNAK track & trace digital system needed? <https://chestnyznak.ru/en/vopros-otvet/>

<sup>7</sup> Text in Russian: <http://static.government.ru/media/files/4ctSSAndNn8M2QLeJbwaFAQRMLMugnVr.pdf>

<sup>8</sup> Online presence CRPT (only available in Russian): <https://crpt.ru/>

<sup>9</sup> Online presence Chestny ZNAK: <https://chestnyznak.ru/en/>

<sup>10</sup> Government of the Russian Federation, comments on amendments to the regulation on the system for monitoring the circulation of medicines (Russian):

<http://static.government.ru/media/files/wTjDuSFTCBAluzEDpWzm9sF1ebkI7B6e.pdf>

<sup>11</sup> Chestny ZNAK, Track & Trace for medicals: <https://chestnyznak.ru/en/business/projects/medicines/>

## Clear marking and inspection

Companies receive the crypto code from CRPT and need to print it as a 2D data matrix code ECC 200 with a minimum print quality Grade 2 (formerly C) on all affected secondary packaging. If secondary packaging is not used, the primary packaging is to be marked instead.

If the serialized products are aggregated in boxes and pallets, to create a continuously traceable “parent-child relation”, the new crypto legislation allows for the use of the well-known Serial Shipping Container Code (SSCC), also according to the GS1 standard.

For customers or employees who hold the product in their hands, the GTIN, the serial number, batch and expiry date must be printed in plain text in addition to the crypto code. Alternatively, the crypto code can also be read out at any time via a smartphone app for iOS and Android to provide you with information about the goods prior to or after their purchase.



PHOTO: LAETUS

Serialized folding boxes with crypto code and plain text product information.

## Become active now!

Chestny ZNAK currently records the mandatory marking of three product groups (fur products, tobacco/cigarettes, nosology medication). In the coming months general drugs, footwear, cameras and flash bulbs, perfume, tires, the textile industry and dairy products shall follow suit. Three other product groups (wheelchairs, bicycles and drinking water) are currently or soon to be undergoing a test phase. The following graphic depicts the various implementation phases for regulations in the pharmaceutical, cosmetics and food industries.



The pharmaceutical industry was one of the first sectors, whose products needed to be marked by law.

### Pharmaceutical industry

Already by February 1st, 2017, Russia initiated a test phase to track medical products for human use. For this purpose, a Track and Trace system called MDLP (маркировка движения лекарственных препаратов; eng. “System for monitoring the circulation of medicines”) or simply Markirovka (Маркировка; eng. “Marking”, “identification”) has been developed and operated by the Russian Internal Revenue Service. In the course of establishing the nationally uniform marking system, responsibility was transferred to the CRPT in November 2018. Despite the fact that general testing phase ran until December 31st, 2019, prior to the end of this phase, on October 1st, 2019, a first mandatory serialization in accordance with the crypto code system became effective. Initially, this only affected a small group of seven particularly cost-intensive and important nosology drugs, including hemophilia, cystic fibrosis and Gaucher disease. As of July 1st, 2020 this will be followed by all prescription (Rx) and over-the-counter (OTC) drugs.<sup>12</sup>

### Cosmetics industry

Producers and providers of perfume and Eau de Toilette had to register with Chestny ZNAK by 31 March 2020. The marking of these products will become mandatory from October 1, 2020.<sup>13</sup> In the current period, the CRPT assumes a counterfeiting rate of 20 percent of the often high-priced products, which is why the Russian government gave top priority to combating counterfeiting back in December 2016.<sup>14</sup>

### Food production

For various dairy products such as milk, cream, yogurt and butter,<sup>15</sup> a test phase started on July 15, 2019 which is due to end on March 31, 2020. The well-known marking system, Mercury (Меркурий), will continue to be used during this time to track raw materials in factories, in which Chestny ZNAK will take over tracking of the products. Obligatory marking follows on June 1, 2020. A pilot stage is currently being developed for the drinking water sector.

<sup>12</sup> CRPT, informative letter 302: <https://chestnyznak.ru/upload/%D0%9F%.pdf>

<sup>13</sup> Text in Russian: <http://static.government.ru/media/files/PfZvT3MgMHBeau79SnsnM82GZo1j9Nb.pdf>

<sup>14</sup> Text in Russian: <http://static.government.ru/media/files/PfZvT3MgMHBeau79SnsnM82GZo1j9Nb.pdf>

<sup>15</sup> For setup see text in Russian: [https://chestnyznak.ru/upload/iblock/bff/Metodicheskie\\_rekomendatsii\\_po\\_markirovke.pdf](https://chestnyznak.ru/upload/iblock/bff/Metodicheskie_rekomendatsii_po_markirovke.pdf)

## Crypto code implementation made easy

In order to use the new crypto code, companies need to register at Chestny ZNAK with an encrypted electronic signature, which will be processed by the Russian Ministry of Digital Development, Communications and Mass Media.<sup>16</sup> Companies that do not have a representative or subsidiary in Russia and run only an export business to the country must have the marking organized by their importer. After applying the code, the goods are tracked across the entire process chain through to removal from the digital goods cycle at the checkout.

### Request code at Center for Research in Perspective Technologies (CRPT)

The crypto code is generated by means of the GTIN and serial number: Manufacturers transmit these two data elements to a cloud operated by Chestny ZNAK and then receive the associated generated crypto code. Manufacturers and importers cannot generate the code themselves, but need to request it from CRPT. The crypto code must then be used within 180 days, at the latest, prior to delivery of the product.

### Special equipment for cryptography

The necessary equipment includes hardware for serialization and possibly for aggregation as well as a so-called emission monitor. This is a cryptographic software and hardware unit that is installed at the respective production site and is connected to the Russian cloud. The emission monitor is provided free of charge by CRPT within Russia.<sup>17</sup>

Companies that manufacture products outside Russia instead have access to a web service, which works based on the same principle and is controlled by separate hardware. In a further step, measuring devices which are used to read out the code repeatedly, ensure continuous transmission of data along the entire supply chain. The software can be operated via mobile terminal devices such as scanners or tablets.

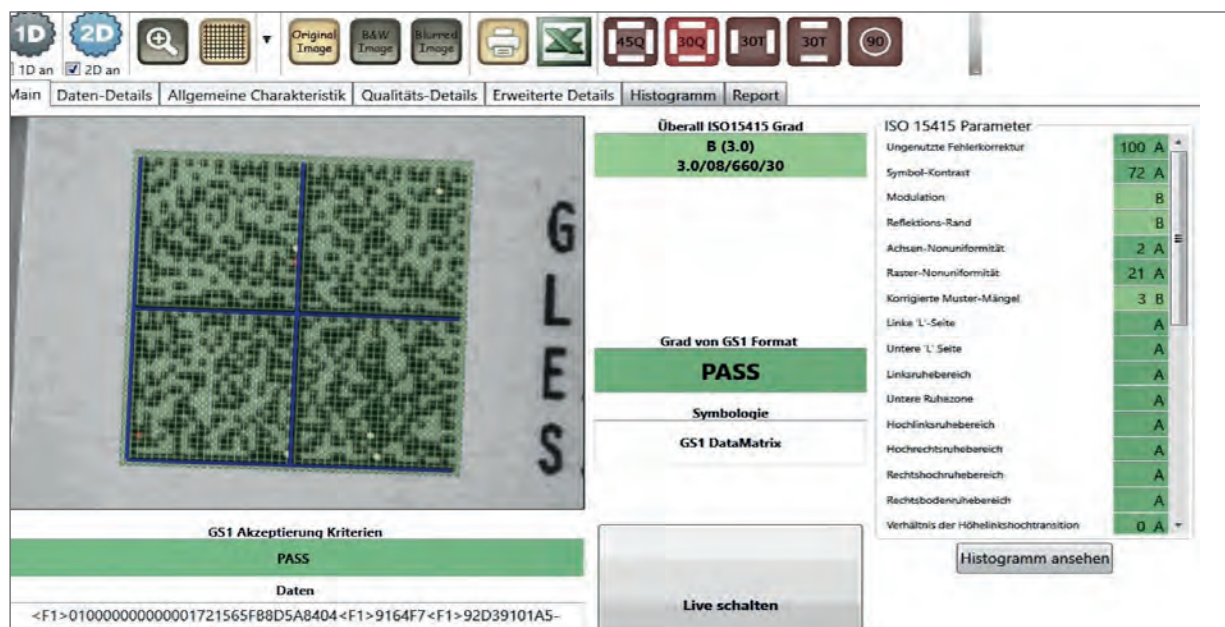


PHOTO: LAETUS

Recording and saving the crypto code data in real time.

<sup>16</sup> Chestny ZNAK, How to become a participant/partner: [https://chestnyznak.ru/en/business/projects/medicines/instruction\\_manufacturer/](https://chestnyznak.ru/en/business/projects/medicines/instruction_manufacturer/)

<sup>17</sup> Chestny ZNAK, Equipment: [https://chestnyznak.ru/en/business/projects/medicines/faq/equipment\\_en/](https://chestnyznak.ru/en/business/projects/medicines/faq/equipment_en/)

## Anticipate hurdles now

Companies face a whole range of challenges with the new crypto code. An experienced partner is recommended for successfully managing this process. The requirement is clearly more than just an additional work step, which calls for a comparably simple adjustment to the workflow.

- **Marking all secondary packaging:** The obligation to mark products with the crypto code applies without any exceptions to all secondary packaging of the product groups defined by CRPT. By 2024, use should be extended to all sectors and products in Russia.
- **Size of the crypto code:** The 48 additional characters of the verification element result in a higher data density. In terms of incorporating the mandatory content alone, the number of modules increases from 22 x 22 to up to 36 x 36. As such, according to CRPT, the requirements on printers and cameras increase considerably in the case of a constant size of the printing area and a corresponding reduction in the module area<sup>18</sup>. If the print area is larger than 0.5 inches, an additional print head would have to be used.
- **Tracking along the entire supply chain:** With this in mind, up to 36 conformity events such as commission, aggregation or product recalls must be reported to the CRPT.
- **Tight time frame, various deadlines:** Companies have or had only a very limited time to implement the new legal framework and the regulations in the pharmaceutical industry, for example, were adjusted shortly before they came into force. Furthermore, there is also a variety of different deadlines within which companies must always keep track of their product groups.
- **Management of data flows:** Numerous countries are currently implementing stricter legal Track and Trace requirements to effectively battle against counterfeit products. As a result of the various regulations, management of data flows for domestic and foreign production or for various target markets is a highly complex task.
- **Interface to Chestny ZNAK:** Companies outside of Russia are instructed to handle the crypto code on the provided web service, whose API is currently still undergoing adjustments.

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<sup>18</sup> Chestny ZNAK, Digital code: [https://chestnyznak.ru/en/business/projects/medicines/faq/crypto\\_en/](https://chestnyznak.ru/en/business/projects/medicines/faq/crypto_en/)

## Finding the optimum solution for Track and Trace

The Russian Crypto Law stands for traceability of products, but also for requirements on the entire supply chain at an unprecedented level in mass production. To what extent manufacturers need to precisely adjust their production and packaging lines, is greatly dependent on the status quo of your machines, printers, cameras and controllers. In order to optimally support customers despite the tight schedule, Laetus has familiarized itself early on with the new legislation in Russia and performed detailed tests in laboratory as well as under practical conditions.

### Test series in the laboratory

In a series of laboratory tests, Laetus printed up to 200 folding boxes per minute with a 40 x 40 module data matrix codes. In terms of hardware, a thermal inkjet printer, the INSPECT camera system and the External Communicator is used to connect to the Russian cloud. S-TTS is used as serialization and aggregation software.

### Proven in practice

In order to test the implementation of the crypto code in a practical manner, Laetus carried out further investigations in cooperation with the CRPT. In a real pharmaceutical production environment, batches of over 1,000 folding boxes were printed at a belt speed of up to 200 boxes per minute. To generate the codes, 44 digit crypto numbers and 88 digit crypto numbers are used according to current legislation. With a size of 36 x 36 and 40 x 40 modules, the codes consistently achieved at least a grade 2 print quality.

Successful tests: Track and Trace systems from Laetus are ready for use in Russia.



PHOTO: LAETUS

### Update process completed

Almost all of Laetus customers' systems have now been made ready for use with the crypto code. Depending on individual requirements, the Track and Trace specialist updates all components.

## All requirements met for the Russian market

The Russian crypto legislation means a new stage in the battle against counterfeit as well as illegally traded products. A fair competitive environment protects companies against financial losses as well as a decline in trust resulting from poor quality goods or goods with damage potential for the consumer.

Indeed, the crypto code poses a new challenge to manufacturers who operate branches in Russia or export goods to Russia. Implementation of the code not only makes it necessary to adapt the workflow with additional stations, but also requires particularly high-quality equipment.

By 2024 at the latest, all companies active in Russia must meet the new standards. Many are under major time pressure to avoid losing access to the key Russian market or incurring fines. In addition to this, further details are announced for the individual product groups or changes are made.

Laetus started early on to prepare for the new legislation and performed extensive tests under laboratory and practical conditions. As a globally leading Track and Trace specialist, Laetus is always available as an experienced partner for its customers and guides them through all stages of the implementation process, from modernization of their systems to complete reinstallation.

**Laetus supports customers in successfully implementing Track and Trace requirements along the process chain, in Russia and across the globe.**

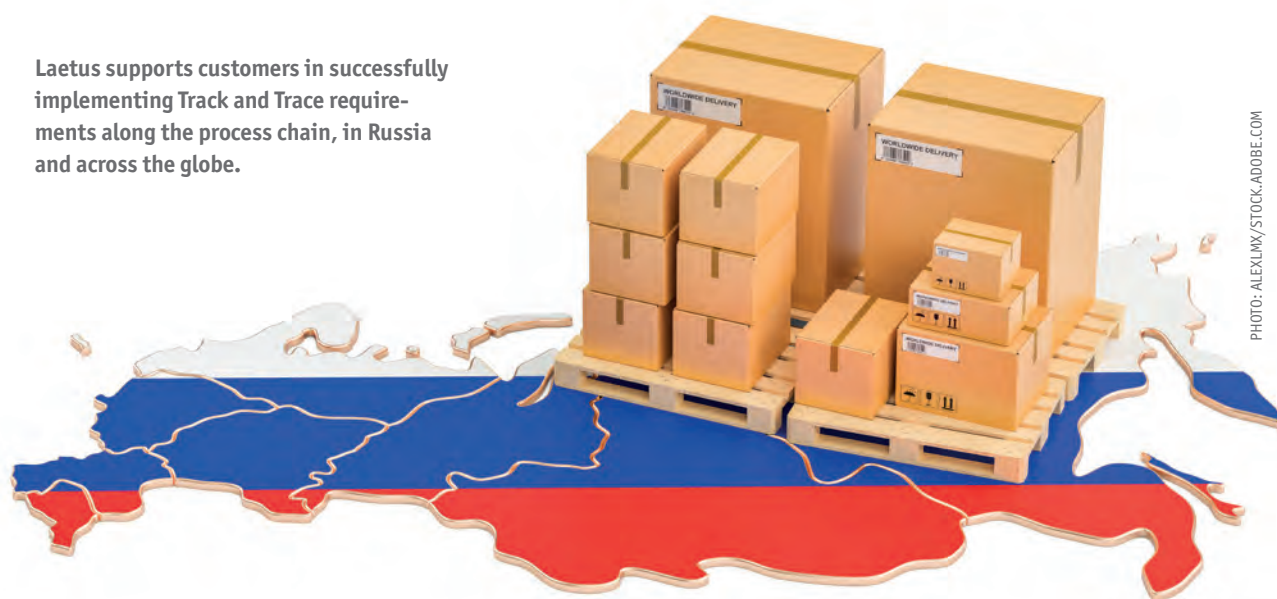


PHOTO: ALEXUMY/STOCK.ADOBE.COM



## Checklist for Track and Trace with crypto code

### Organizational matters:

- Is the legal situation / transition period for your products known? Is all information up-to-date?  
.....
- Registration for Chestny ZNAK: Do you fulfill the requirements for using the crypto code?  
.....
- Companies without branches in Russia: Do you have a cooperative partner registered at Chestny ZNAK for importing goods?  
.....

### Equipment:

- Is the necessary aggregation hardware already available?  
.....
- What size/number of modules do your data matrix codes need?  
.....
- Does the secondary packaging offer sufficient space for the data matrix code?  
.....
- Do existing printers and cameras offer sufficiently high resolution properties?  
.....

### Further questions:

- Has the IT department already tested the interface to Chestny ZNAK, incl. requirement of the crypto code and deletion of batches?  
.....
- Has the workflow been adjusted (code requirement, sending for print)?  
.....
- Have internal company processes been adjusted?  
.....
- Is an experienced partner available for challenging Track and Trace questions?  
.....



## Keeping full track with Laetus

Laetus is a globally leading provider of solutions for inline vision quality control and complete track & trace systems. More than 18,000 installed systems ensure the highest product quality and optimization of packaging processes for more than 3,500 customers in industries such as pharmaceuticals, medical technology, cosmetics, food and FMCG.

From initial contact to implementation through to support, Laetus meets all regulations and individual customer requirements with its modular, flexibly adaptable systems. The company's own Track & Trace Academy at the Bensheim site also offers regular training including live demonstrations in the showroom.

The company was founded in 1974 and has its headquarters in Alsbach near Darmstadt, Germany in the mechanical engineering region of Rhine-Main/Rhine-Neckar. Today it employs a team of over 250 people and has branches in the USA, Mexico, Brazil, China, Great Britain, France, Italy, Spain, Poland and the United Arab Emirates.

The worldwide network for sales, service and project management is supported by around 50 independent representatives and distributors. Since 2015, Laetus has been part of the Danaher Group and, together with ALLTEC/FOBA, Esko, Linx, Pantone, Videojet and X-Rite, is part of the product identification platform as an independent company.

## Why Laetus Track & Trace?

We partner with you

- from initial contact and implementation to continuous support.

- More than 45 years of experience
- Expertise in track & trace in pharma, food, beverage, cosmetics and other industries
- Project management from consultation to implementation
- Flexibility when integrating solutions due to brand agnostic and modular approach
- Training academy with individual offers
- Worldwide technical support
- 24/7 hotline



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