

Chamber for Indo Russo Technology Collaboration
Russian Technical Committee on Standardization “Artificial intelligence”
RUSSOFT Non-profit partnership of software developers

WHITE PAPERS

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Section 1: India and Russia goals in Artificial Intelligence conformity assessment

Common Goals of Artificial Intelligence Conformity Assessment in India and Russia

Safety: approaches to regulating the testing of safety in AI systems under development, forming a regulatory and methodological basis for establishing mandatory safety requirements in the field of AI.

Awareness: increasing public awareness and confidence in AI, promoting responsible and ethical use of AI for the benefit of society, promoting culture of AI literacy and education, building the capacity and skills of the workforce and society to harness AI opportunities and challenges, strengthening public trust in AI.

Interstate Cooperation: strengthening of bilateral and multilateral cooperation in the field of high technologies based on interstate unification of certification testing procedures and standards for AI products and services.

National Cooperation: promoting cooperation and coordination among various stakeholders, including government, regulatory bodies, industry, academia, civil society.

Global Harmonization: working with international partners to harmonize AI conformity assessment requirements to ensure uniformity in assessment and thereby facilitating global portability of AI products and services.

Innovation: promoting innovation in the development of AI systems by providing clear and predictable standards and regulatory frameworks as well as guidelines and best practices in the form of domain-specific knowledge bases.

Integrity and Coherence of the Information Infrastructure: ensuring the integrity of the information infrastructure based on the uniform procedures and requirements for data sets used for certification testing and validation of AI products and services.

Promotion of Sustainable Development Goals: effective, safe and resource optimized implementation of AI technologies in various economic and social sectors.

Promotion of Fair Competition: ensuring objective comparability of consumer properties of products and services developed by different companies and/or provided by different suppliers.

Consumer Right Protection: providing consumers with guarantees of functional correctness and operability as well as safety in the use of these products and services.

Standardization: creating AI standards strategy and policy, and defining the roles and responsibilities of the various actors and institutions involved in AI design and implementation, to promote innovation, adoption, trust and portability of AI systems.

AI Infrastructure: building a robust and inclusive AI infrastructure and data and communication ecosystem, and ensuring availability, quality and security of AI models, data and resources.

Assurance of Conformity Assessment: creating a uniform and standard set of tools to ensure competent, consistent and reliable conformity assessment that promotes mutual recognition of the functional reliability and safety of AI products and services at the interstate level.

Goals of Artificial Intelligence Conformity Assessment in Healthcare

Effectiveness and Optimization: testing AI-based healthcare systems are effective in diagnosing diseases, providing treatment recommendations, and improving patient outcomes. Deployment flexibility in resource-constrained regions requires optimizations of AI systems.

Fairness and Inclusiveness: ensuring AI-based healthcare systems are impartial and do not discriminate against any individual or groups, which includes avoiding bias in data collection, algorithm development and decision-making processes. AI-based healthcare systems will take into account regional practices and requirements leading to improved quality of healthcare services in rural areas.

Reliability: ensuring AI-based healthcare systems are stable and reliable, including remote systems providing healthcare services via remote communications.

Safety: ensuring AI-based healthcare systems are safe for patients and healthcare professionals, which includes ensuring that systems are accurate, reliable, and free from errors that could cause harm to people.

Scale: ensuring AI-based healthcare systems are able to scale to millions of users, possibly working remotely from villages, facilitating the virtual proximity of healthcare experts to rural areas.

Transparency: making AI-based healthcare systems transparent and understandable to patients, healthcare providers, and policymakers, which includes providing clear explanations of how the systems work and what data they use.

Goals of Artificial Intelligence Conformity Assessment in Agriculture

Benefits for Farmers and Consumers: ensuring AI-based agricultural systems benefit both farmers and consumers, which includes increasing crop yields, improving food quality, and lowering food prices.

Environmental Impact: assessing the environmental impact of AI-based agricultural systems and identifying ways to mitigate any negative impacts, while improving positive impacts.

Scale: ensuring AI-based agricultural systems are able to scale to millions of users, possibly utilizing them remotely from villages, promoting virtual proximity of agricultural experts to rural areas.

Social Impact: assessing the social impact of AI-based agricultural systems and identifying ways to ensure they benefit all stakeholders, including farmers, consumers and rural communities.

Sustainability: ensuring sustainability of AI based agricultural systems, which includes minimizing the use of pesticides, fertilizers and natural resources such as water and energy.

Section 2: List of AI tasks in healthcare and agriculture

Tasks of Artificial Intelligence in Healthcare

Medical Imaging Analysis: AI algorithms can analyze medical images, such as X rays, computer and magnetic resonance imaging (MRI), to detect and diagnose diseases. For example, AI is used to detect breast cancer in inexpensive ultrasound images and to detect abnormalities in retinal images in order to diagnose diabetic retinopathy.

Categorization, Building Models of Typical Objects and Processes

Drug Discovery and Development: AI can accelerate the drug discovery and development process by identifying potential drug candidates and predicting their effectiveness. For example, AI is used to develop new drugs for cancer and other diseases.

Stratification of Patient Risks: AI can be used to identify patients at high risk of developing certain diseases, enabling early intervention and prevention. For example, AI is used to stratify patients based on their risk of developing cardiovascular disease.

Categorization and Systematization of Medical Information

Process Modeling: AI can be used to find common patterns in a large amount of medical information and build common models. For example, AI is used to identify common principles and patterns of the development of epidemics, classifying medical research data.

Predictive Models, Finding Solutions

Support for Clinical Decision Making: AI can provide doctors with real-time decision support while treating patients, helping them make more informed and accurate decisions. For example, AI-enabled tools are being developed to help doctors choose the most appropriate antibiotics for patients with bacterial infections.

Personalized Medicine: AI can analyze patient data to tailor treatment plans and predict its outcomes. For example, AI is used to predict the risk of developing cardiovascular disease and recommend personalized treatment regimens for cancer patients.

Maintenance of Medical Equipment: Using predictive analytics tools to diagnose and maintain medical equipment. For example, AI is used to automatically monitor the quality of medical CT scanners, reducing downtime and the cost of repairing equipment.

Implementation of Environmental Impacts and Autonomous Movement and Positioning in Space

Robotic Surgery: Surgical robots with AI are becoming increasingly advanced, which allows minimally invasive surgeries to be performed with greater accuracy and control. For example, robots are used to perform various surgeries, including orthopedic, neurosurgical and gynecological cases.

Service Robots: AI can be used to automate service processes in medicine that require the physical involvement of personnel. For example, the use of AI in the automation of disinfection of medical institutions, patient care rehabilitation.

Predictive Models, Finding Solutions

Prosthetics and Prevention: AI can be used to personalize technical means of rehabilitation and means of disease prevention and treatment. For example, AI is used to support complex prosthetics procedures in dentistry and to create separate medical devices to reduce the risk of musculoskeletal diseases.

Epidemiological Modeling: Use predictive analytics tools to predict epidemics in particular regions and countries. For example, AI is used to predict the spread of influenza and SARS epidemics.

Administrative Processes: AI can be used to optimize administrative processes, including intelligent patient distribution systems and automation of drug benefits.

Social Communications

Virtual Assistants for Healthcare: AI-based virtual assistants are being developed to help healthcare professionals solve various tasks, such as scheduling appointments, maintaining medical history and answering questions of patients. Such virtual assistants will help improve effectiveness and productivity in healthcare.

Tasks of Artificial Intelligence in Agriculture

Pattern Recognition

Pest and Disease Detection: AI can detect crop pests and diseases through image recognition techniques, which can help farmers take timely actions to control pests and diseases by preventing crop losses. For example, AI-based tools are being developed to detect pests and diseases of rice, sugarcane and other crops.

Livestock Health Monitoring: AI allows livestock health to be monitored and early signs of disease to be detected, which can help farmers prevent animal deaths and increase livestock productivity. For example, AI-based systems are being developed to monitor the health of cows, buffaloes etc.

Agricultural Land Monitoring: Using video analytics tools (including remote sensing tools) to monitor agricultural land. For example, AI is used to determine field contours, crop dynamics, and identify and monitor crop health.

Control: AI can be used for quality control and sorting of agricultural products. At the same time, video analytics tools are used to monitor, evaluate and optimize effectiveness of crop processing procedures and working methods.

Building Models of Surrounding Objects and Processes

Categorization and Systematization of Agricultural Information Process Modeling: AI can be used to find common patterns in a large amount of information and build common models. For example, AI is used to identify common principles and patterns in animal and plant development, disease development, and classification of research data.

Finding Solutions

Crop Yields Prediction: AI can analyze weather data, soil health and crop growth patterns to predict yields. This information can help farmers make informed decisions about planting, irrigation, fertilization and crop selection. For example, AI models are used to predict yields of wheat, rice and other major crops.

Precise Agriculture: AI can optimize the use of resources, such as water and fertilizers, to increase crop productivity, helping farmers reduce costs and increase yields. For example, AI-based irrigation systems are being developed to optimize water use based on crop needs and soil conditions.

Finding Solutions

Supply Chains Optimization: AI can streamline supply chains by forecasting demand, identifying and recommending efficient transportation routes to help reduce food waste and improve food security. For example, AI models are used to predict demand for milk, fruits and vegetables.

Food Security Assessment: AI can analyze food samples to detect contaminants and pathogens that can help ensure food security and quality. For example, AI-based tools are being developed to detect pesticides and other contaminants in food.

Implementation of Environmental Impacts and Autonomous Movement and Positioning in Space

Agricultural Robotics: Robots with AI are being developed to perform various agricultural tasks, such as harvesting, weeding and sorting of crops. These robots can help farmers reduce labor costs and improve efficiency. For example, harvesting robots are being developed for a variety of crops, including strawberries, apples and grapes.

Social Communications

Interaction with Personnel and Customers: AI can be used to automate the interaction of potential customers with manufacturers based on chat-bots and video messaging. In addition, voice control systems, identification and monitoring the status of sensors, actuators and other equipment can be done with the help of AI. It is possible to use intelligent algorithms to automate responses to customer requests.

Section 3: AI Apps for Healthcare and Agriculture in the markets of Russia and India

Agriculture (Russia)

Developer	AI Solution
Rostselmash	Automatic control system RSM Agrotronic Pilot 2.0 RSM Automatic filling of the vehicle body Project RSM Optimax Plus, development of software "Analysis of threshing quality". System for automatically adjusting the threshing and separating device of the combine depending on the current harvesting conditions, threshing quality, amount of losses, splitting up, and weediness RSM Voice Access is voice control system RSM Face ID is operator/user identification RSM OK ID is monitoring the state of the equipment operator RSM Automatic coupling/auto-mounting adapters (RSM Auto Header). Automation of the process of aggregating a header with a combine and a trolley for a header with a combine.
Rostelecom	System for determining and comparing the contours of arable land A video analytics-based service that automatically calculates the number of pigs, the total weight and the dynamics of its change for each animal in the pen
ER-Telecom	Digital service of agrometeorological data from field weather stations of a regional digital platform for increasing the efficiency of planning agricultural work, forecasting the development of crops, choosing the most effective methods of using fertilizers and plant protection products Automation of temperature monitoring in warehouses and grain storage facilities using a thermal control system

	Cloud video analytics for automating the security system, identification and automation of transport checkpoints, identification, counting of animals and/or finished products, determining the quality of products based on physical parameters
CROC	Harvest accounting system Digital animal profile system Aquaculture farm monitoring system Feed accounting system for animals and poultry Monitoring and control system for irrigation machines Video analytics systems for monitoring production processes
Geoscan	Monitoring agricultural land
SCANEX	Satellite field monitoring service
Cognitive Pilot	Automatic control system for agricultural transport
GEOMIR	"Digital twin" of an agricultural enterprise
NSA LLC	Computer vision complex for automatic monitoring of sows and piglets in the farrowing area Hardware and software complex for monitoring diseases of the musculoskeletal system in cattle Robotic AI complex for monitoring the technological situation in industrial greenhouse complexes
DigitalAgro	Solution for quality control of agricultural production (agricultural enterprises with an area for crop production of more than 6,000 hectares).
Connectome.ai	Animal Care system: Calving detects the onset of labor in cows and promptly responds to possible violations and disruptions in the work of staff Sanitation is a solution for monitoring conformity with hand hygiene by employees in production
ALAN-IT	Analytics and forecasting service for dairy production Service for data collection, monitoring, analysis and management
CITY-FARMER	Modular farms for growing mushrooms on an industrial scale
Digital Consulting Solutions	Cattle population forecast system Plant Disease Forecast System System for selecting crops and timing for sowing Fertilizer application forecast system Equipment failure prediction system System for forecasting demand and optimizing the purchase of spare parts and equipment
Matller	A system for monitoring employee performance in areas where manual labor is used.
AssistAgro	Agronomic decision support system. The company's product is based on computer vision, predictive analytics and satellite multispectral imaging.

Healthcare (Russia)

Scientific and Practical Clinical Center for Diagnostics and Telemedicine Technologies of the Moscow Department of Health	<p>Project on the use of innovative technologies in the field of computer vision for the analysis of medical images</p> <p>AI doctor consultant service for automatic analysis of X-ray studies for doctors.</p> <p>Project "Implementation of speech recognition technology"</p>
Group of companies TsRT	<p>Voice2Med is solution for filling out medical documents by voice</p> <p>A virtual assistant that can automate residents' calls to the Unified Regional Information and Referral Service 122</p> <p>Voice robot optimizing the work of medical institutions</p>
UNIM	Pathomorphological diagnosis of formations using AI
Intellogic LLC (Botkin.AI)	Medical decision support system for analyzing medical images in the format of retrospective and prospective screening using AI (CT OGK, GM, MMG)
K-SKY LLC (Webiomed)	<p>A decision support and decision-making system for a comprehensive assessment of anonymized medical data in order to identify risk factors, determine prognosis for the development of diseases and identify suspected missed diseases</p> <p>A management decision support system designed to aggregate a large amount of medical data, which helps to form an understanding of the situation regarding morbidity and the prevalence of risk factors</p> <p>System for extracting data from medical records</p> <p>AI-based system for collecting and researching data from real clinical practice</p> <p>Webiomed technology for analyzing various medical data of the patient and generating a prognosis that allows identifying diseases at an early stage</p>
Diagnoca	<p>Virtual dental assistant in treatment planning</p> <p>Automatic segmentation of 3D images in a dental model</p> <p>X-ray reports generated by Diagnocat software</p>
SberMedII LLC (Sbermed AI)	<p>The CT Stroke service analyzes CT images and helps to quickly and accurately determine the signs of a stroke, the type and affected areas</p> <p>The "CT Lungs" service identifies areas of tissue damage, assesses the degree of damage in pneumonia, and also detects oncology at an early stage</p> <p>The TOP-3 service helps doctors make a preliminary diagnosis based on the patient's medical history and medical records</p> <p>The Mammography service helps identify suspicious lesions on mammographic images of the mammary glands</p>
FtisisBioMed	AI-based service for analyzing digital fluorographic images for the presence of all possible pathologies that can be detected during fluorography
LLC "Aimed" (ProRodinki)	Detection of malignant skin tumors using mobile devices and neural network technologies

PTM LLC (Third opinion)	<p>AI services for automatic analysis of mammograms, fluorograms, radiographs and CT scans of the chest organs</p> <p>A service to improve patient safety in a medical facility to objectively assess the workload of staff and monitor conformity with care protocols</p> <p>Service for routing chest x-rays in the reference center</p>
AIRA Labs	<p>Multi-IRA service is automatic comprehensive analysis of 10 pathologies according to chest CT data (pulmonary nodules; emphysema; detection of free fluid (effusion) in the pleural cavities; COVID-19; dilation of the pulmonary trunk; aortic aneurysm; coronary calcium according to the Agatston index; volume epi- and paracardial fat; adrenal neoplasms; vertebral compression fractures and assessment of their density to detect osteopenia/osteoporosis)</p>
Care Mentor AI	<p>CT Onco Mentor is a computer vision system for detecting focal lung formations based on computed tomography results</p> <p>CovidCT is service for detecting COVID-19 in radiation studies</p> <p>Service for screening breast tumors using X-ray mammography data</p> <p>Service for detecting longitudinal flatfoot using radiographs</p>
MEDICAL SCREENING SYSTEMS LLC (Cels)	<p>"Second reading" service is additional analysis of images using AI, which the radiologist worked with</p> <p>AI-based service to increase the speed of analysis and accuracy of interpretation of fluorograms and radiographs</p> <p>Service for analyzing computer tomograms for signs of cerebral hemorrhages</p> <p>AI platform for mammogram analysis</p>
Airim	<p>The digital platform "AIRIM" combines 3 components: "Data Set Factory" - a data engineer's workstation based on automated data markup with tools for group work, verification, etc.; "Data.stream" is a low-coding designer of AI services that provides automation of the creation of products or their modification by medical workers with minimal knowledge of a programming language; "Coordinator" - software modules for supporting the operation of AI services that ensure data exchange (receiving instrumental research, processing AI and returning an AI response).</p> <p>The Mammolens screening service is a tool for implementing regional screening programs with sorting and routing to the workplace of a doctor in the region.</p> <p>AI services that identify signs of specific diseases (coronary calcium, hydrothorax, COVID-19, etc.)</p>
AIRI Artificial Intelligence Institute	<p>An open tool for predicting antibody binding sites on viral and bacterial proteins and assessing the immunogenicity of such interactions</p> <p>Project to create algorithms for automatic diagnosis of rheumatoid arthritis</p>

	<p>GENA_LM is the world's first DNA language model trained on the most complete human genome assembly to date, T2T-CHM13.</p> <p>A project to build an effective system of interaction with the human brain based on AI technologies</p> <p>The DeepCT model is designed to determine the cause of hereditary diseases based on the analysis of non-coding proteins in patient genomes</p>
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Healthcare (India)

Niramai	This AI-based system utilizes low-cost ultrasound scans to detect breast cancer at an early stage, addressing the issue of limited access to advanced diagnostic modalities in rural areas. Niramai's technology has been shown to achieve high sensitivity and specificity in detecting breast cancer, potentially saving countless lives.
HealthPact	This AI-powered platform connects patients with doctors, providing personalized healthcare recommendations and facilitating access to quality medical services. HealthPact's app streamlines the process of finding suitable doctors, scheduling appointments, and obtaining medical advice, addressing the challenges of India's fragmented healthcare system.
Sigtuple	This AI-driven system analyzes medical images, including X-rays, CT scans, and MRIs, to detect abnormalities and assist in diagnosis. Sigtuple's technology has been adopted by hospitals and healthcare providers across India, improving diagnostic accuracy and efficiency.
Artivatic.ai	This AI-based system predicts and manages the risk of heart attacks, helping individuals take preventive measures and reduce their risk of cardiovascular events. Artivatic.ai's technology analyzes patient data, including medical history, lifestyle factors, and genetic information, to provide personalized risk assessments and recommendations.
Qure.ai	This AI-powered platform assists radiologists in diagnosing diseases more accurately and efficiently. Qure.ai's technology analyzes medical images and provides real-time insights to radiologists, helping them identify subtle abnormalities and make informed diagnostic decisions.
Rises.io	Rises.io is a high-tech startup with innovative industry solutions for healthcare & other verticals. For healthcare market the AI solutions including diagnostics automation, assistance to the clinicians & pandemic modelling are delivered via rises' AI platform, based on technologies like Deep Learning, AI, BigData & Blockchain.
Arogyam Medisoft	Arogyam Medisoft enables provisioning of quality and affordable solution in the area of agriculture and rural healthcare by adopting the benefits of advancement of technology (sensor, computer vision and AI).
FrontdeskAI	Frontdesk AI provides 24x7 personalized customer care service through a customizable, automated front desk via voice and chats for local businesses. The company's current AI assistant portfolio serves the wellness market including the spa, salon, fitness industries and dental market.

vPhrase Analytics Solutions Pvt. Ltd.	vPhrase helps companies make their reports easy to understand by explaining the insights in words, using AI. The company's patent-pending platform, Phrazor, analyses data, derives insights and then communicates those insights, in words, in multiple languages.
360 Health Vectors	Health Vectors is an online platform, which measures and provides related suggestions for patients based on predictive analytics and cognitive computing. It is an AI-enabled platform, which can be integrated with various data sources and applications for delivering health analyses of individuals and groups.
Datacogin	Datacogin is an advanced analytics company offering machine intelligence platform and other intelligent applications. The company uses patient/subject information data (such as the patient's symptoms, signs & laboratory investigations) and medical literature data, combines that with deep learning and cognitive technologies to achieve actionable insights regarding diseases & patients.
Artelus	Artelus builds primary screening tools that enable doctors to diagnose a large number of patients simultaneously for a variety of diseases. The company integrates deep learning technology that learns from the data provided, for developing innovative products that can further learn with each diagnosis.
Akira.ai	Akira AI's platform enables users to automate the infrastructure to train and deploy deep learning models on public cloud as well as on-premises. The company delivers AI solutions in infrastructure, healthcare, public safety, telecom, BFSI and it also offers data analytical services for retail, HR & recruitment, manufacturing, marketing and advertising, and insurance industry.
Predible Health	Predible is applying AI to medical imaging, enabling quicker delivery of care with increased accuracy by building patient-centric, organ-specific cancer care workflows that empower clinicians to understand the disease comprehensively. The results will significantly aid radiologists and oncologists to plan personalized, thus effective treatments.
Aindra Systems Pvt. Ltd.	Aindra Systems is involved in AI-technology space and is manufacturing Drishti, handheld devices with inbuilt cameras like smartphones, tablets and laptops that have the ability to detect and identify people. Images that are captured using these devices and sent to a cloud based server which are then processed by intelligent algorithms to detect and identify objects.
CureSkin	CureSkin offers a solution using computer vision to recommend treatments for skin diseases to patients who don't have access to trained professionals. With just a photo, CureSkin claims that it can diagnose approximately 80% of skin conditions and recommend treatment regimens.
Jubi Ai	Jubi Ai is an AI-led automation company that solves marketing problems in terms of automating customer education, online sales, customer service, engagement, etc. It is a platform that uses bots to drive customer engagement.

Brainpan Innovations	Brainpan Innovations brings together the concepts and ideas in the area of healthcare that aims to bridge the underlying gaps between Life Sciences and research disciplines such as Big Data, Super-Computing, Machine Learning, and Mathematical Modelling. Brainpan Innovations developed EHR platform called Doctor's Diary for Kids addresses these challenges. Doctor's Diary is a data-driven application for doctors, clinics, and hospitals to document diseases, diagnosis, and prescriptions.
Praktice.ai	Praktice.ai is a medical AI driven autonomous workforce for handling hospital operations from front line care to care coordination, and follow-ups.
FEDO	FEDO is a self-learning platform that predicts the health risk profile of individuals from a photo and 5 simple questions. It leverages AI, Machine Learning, NLP, cognitive computing to predict an individual risk of lifestyle diseases based on the demographic, lifestyle and environmental data, which is collected through a short questionnaire.
i3 Systems India	i3Systems is a healthcare machine learning product company which particularly focuses on insurance clients. The company builds automation products for the health and life insurance sector. Its AI systems implement data-centric processes that help in transforming the way policies are underwritten and claims are settled.
ChironX	ChironX is engaged in solving healthcare diagnostics using AI, data science and advanced image processing. Using complex image processing AI algorithms along with machine learning techniques, the company provides AI-powered software to detect diseases that impact large populations from medical images. The ChironX platform helps to manage the workflow of hospitals better and reducing a doctor's administrative work burden.
Tricog Health Pvt Ltd	Tricog Health Services was founded in 2014 with the goal to save life through accurate and instant diagnosis of cardiac incidents. Tricog has done this by using Medical Expertise, Technology and AI to scale to over half a million ECG diagnosis in 4 years.
MedCords	An ML and cloud-based ecosystem that connects and enables various stakeholders to smoothly access and share the medical data. It makes health management easier for the users, securely storing health reports, prescriptions, analyzing and predicting health patterns. MedCords was founded in 2016.
HealthPlix	Driving health outcomes at point of care in the physician's office. HealthPlix Digital Health Platform is trusted by physicians across 12 states in India spanning specialties such as – Endocrinology, Diabetology, Cardiology, Nephrology, Oncology & Internal Medicine; making HealthPlix the largest Digital Health Platform used by physicians in India at point-of-care during patient consultation.
Parentlane	Parentlane is India's first AI powered connected care digital health platform empowers parents & doctors to monitor key indicators, get insights and proactive care solutions right from pregnancy till 5 years for a healthy development. It is India's most comprehensive pregnancy health solution, which helps you to monitor all key aspects and get instant solution from experts for your healthy pregnancy.
Forus Health	They are providing integrated and intelligent technology modules such as Cloud -based telemedicine platforms to augment the efficiency of our medical systems.

Doxper	Doxper is used wherever pen touches paper in healthcare. With its 'zero behavior change' approach, Doxper is seamlessly digitising healthcare data, currently missing in India and other developing economies.
mFine	Founded in 2017, mFine is an on-demand, digital primary healthcare platform which offers professional diagnostics and health check-up services that can be availed from the comfort of home, office, or even a spa. Since its inception, mFine has redefined the primary healthcare sector.
H2O.ai	H2O.ai is democratizing AI for the public good and is leading a movement of open source data science and machine learning communities, including 20,000 organizations with more than 250,000 data scientists worldwide.
Digibeings	Digital humans are AI-powered, lifelike characters that can see, hear and understand you, your staff and your customers, meaning they can recreate "real" human conversations. Today, they exist in both the physical world through kiosks (in settings like retail stores to help cut down on check-out queues) and digitally on web browsers and mobile operating systems, where they can serve virtually infinite numbers of customers at once. Sitting behind the digital human is an AI platform that determines behavior, EQ and speech in real-time, so the conversation can flow naturally, as it tends to in real life.
DeepBrainz	A DPIIT/DIPP Recognized AI & Technology Startup Company with an International or Global Team. DeepBrainz AI, A Next-Gen Integrated End-to-End Autonomous AI (AutoML) Platform & AI-first SaaS with Edge IoT Platform for Autonomous Healthcare, Connected & Level-4 Autonomous Driving Vehicles, Conversational AI for Everyone from Enterprises to End-users.
GRAINPAD Private Limited	GRAINPAD is a body dedicated to performing and promoting research, innovation and progress in the fields of genetics, robotics, AI, nanotechnology, physics, astronomy and 3D bio-printing and everything connected to them specially to promote healthcare and improve the quality of life of all humans and every living being on earth and beyond.
Hind AI Labs	Hindlabs delivers high-end diagnostic services adding value to partner hospitals by deploying the latest diagnostic technology and operational support. The objective is to deliver quality services at affordable costs for the common people. Hindlabs provides professional lab management services for both in vitro diagnostics and radio diagnosis centers in hospitals.
Ai-Bharata	A stealth mode startup focused on developing next-generation AI products, services, and emerging technologies including but not limited to Super-Intelligence, Cybernetics, Neuromorphic Computing, and Medical AI.
Photospimedx Pvt. Ltd.	They are budding healthcare technology startup incorporated as PhotoSplMeDx Pvt. Ltd. incubated at SIIC, IIT Kanpur. They are involved in the research and development of innovative diagnostic devices.
Five(5)C Network	Every hospital's private radiologist. They ensure that hospitals and diagnostics centers never need to worry about the unavailability of a radiologists again. They can be called the Uber of Radiodiagnosis. They are India's First Diagnostics Network, and they make radiodiagnosis more accessible, affordable and accurate through technology. They are 5C because for the first time, the 5 stakeholders of Radiodiagnosis: The Doctor, Radiologist, Patient, Technologist

	and Hospital have a solution for each of their problems, through 5C Network.
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Agriculture (India)

eKisan	This AI-powered platform provides farmers with weather forecasts, crop advisories, and market information, empowering them to make informed decisions about crop management and maximize their yields. eKisan's app has been widely adopted by farmers across India, bridging the gap between agricultural data and decision-making at the farm level.
Gramophone	This AI-based system analyzes soil health data to recommend optimal fertilizer application, reducing the overuse of fertilizers and promoting sustainable agricultural practices. Gramophone's technology has been shown to improve crop yields while minimizing environmental impact, addressing the challenges of soil degradation and nutrient imbalance.
AgNext	This AI-driven platform uses image recognition to detect pests and diseases in crops, enabling early intervention and reducing crop losses.
Fasal	This AI-powered platform provides crop insurance to farmers, helping them mitigate financial risks associated with crop failures due to natural calamities or pests and diseases. Fasal's technology utilizes satellite imagery and weather data to assess crop health and provide timely insurance payouts.
CropIn	This AI-based system provides farmers with real-time data on crop health and weather conditions, enabling them to make informed decisions about irrigation, fertilization, and pest control. CropIn's technology has been adopted by farmers and agricultural organizations, improving crop management practices and enhancing productivity.
Arogyam Medisoft	Arogyam Medisoft enables provisioning of quality and affordable solution in the area of agriculture and rural healthcare by adopting the benefits of advancement of technology (sensor, computer vision and AI).
Agricxlab Private Limited	Agricx is the world's first AI enabled SaaS stack for entities in the business of producing, trading, storing, transporting, processing or financing of agri produce/commodities.
AiBono	As the first-ever AI-powered aggregator of fresh produce in India, AIBONO is leading the \$250 billion fruits and vegetable chain towards a transformation with its disruptive Seed-to-Plate platform.
TartanSense	Founded in 2015, Tartansense is an AI-powered robotics solutions provider empowering small farm holders. TartanSense has planned to use these funds to scale up its first product, BrijBot - an AI backed robot, designed to assist small cotton farmers in the weeding process.

Intello Labs	Intello Labs utilizes image matching and machine learning to gauge the quality of crops. It presents advanced image recognition technology that can identify objects, faces, flora fauna, and tag them in any image. Intello Labs detects a change from specifications, matching output to needs. They leverage the most excellent Analytics tools and methods – Deep Learning, AI, Computer Vision, Internet of Things and Big Data - in generating product-based-solutions for our clients.
MyCrop	MyCrop is a technology enabled initiative for farmers that empower them through Farmer Mitra (a village level entrepreneur, VLE) delivering them Information, Expertise and Resources, to increase their Productivity & Profitability hence improving their Standard of Living.
Vinfinet Technologies	Vinfinet Technologies is a leading software development firm based in Bangalore, offering software development and technology services for embedded and networking products.
Stellapps Technologies	Stellapps was founded by a group of IITians and technologists with a strong industry background with over 100+ cumulative years of Industry experience across Wipro, Nortel, Ericsson, Alcatel-Lucent, AT&T, Vodafone, Telstra, Bharti-Airtel, Aircel, Avaya, Cisco et al.
BharatRohan	BharatRohan empowers Indian agriculture industry with an extraordinary in -depth understanding of land and crops by using unique drone based hyperspectral remote sensing and AI.
Farms2Fork Pvt. Ltd.- CultYvate	CultYvate is India's foremost precision Ag Tech, startup which aims to enhance agriculture productivity for marginal farmers. CultYvate's mission is to increase crop yield while reducing farm inputs with help of precision farming technology.
Renfed	Renfed is a platform that connects smart farmers with the Agri value chain to revolutionize the Agricultural landscape. It is a farmer-first network on a digital-friendly platform, providing access to instant agricultural services and solutions. Here farmers learn, earn, and grow.
BigHaat	BigHaat is India's largest agri inputs digital marketplace platform providing farmers end-to-end crop advisory and a wide range of quality inputs such as seeds, pesticides, fertilizers, nutrients and farm implements by leveraging the power of data, science and technology.
Farmonaut	Farmonaut started in 2018 with a vision to bridge the technological gap between farmers and bring the latest state-of-the-art technologies in the hands of each and every farmer in the most cost-effective way. Farmonaut has been at the forefront of providing satellite data directly to the farmers through its award-winning developed android, iOS and web platforms and has monitored lakhs of hectares of farm lands nationally as well as internationally.
Aigroedge	AIGROEDGE Technologies is a deep tech start-up started by a team of engineers, researchers and entrepreneurs developing edge IoT sensory and AI powered digital solutions for specialized agriculture market.

Section 4: Relevant national and international standards

Prospective standardization program for the priority area "Artificial Intelligence" for 2021-2024

Prerequisites for the Program development. Development of modern means of computing, improvement of the infrastructure of collection, transmission and storage of information, as well as the development of new methods of data processing open wide opportunities for the creation and application of AI technologies to solve applied problems in various sectors of the economy and social sphere.

At the same time, AI technologies, including those based on machine learning methods, are characterized by the following features, which must be taken into account in their practical application:

- AI algorithms are not fully interpretable. For a significant part of data operations provided by an AI algorithm, a person of any high qualification cannot make a decision on the correctness or incorrectness of these operations on the basis of criteria, the truth of which is confirmed by external considerations (axiomatic postulates, proven theorems, experimentally confirmed models, logically explainable dependencies, etc.);
- when creating AI algorithms, specially prepared datasets containing examples of solving specific applied intellectual problems are used. AI algorithms have a generalizing ability, due to which the variability of conditions of an applied AI problem for a training dataset can be significantly less than in further practical application of the algorithm;
- in many cases in the process of practical application of AI algorithms there is a possibility to extend the training datasets by additional examples of solving applied problems in new conditions not provided by the original training datasets. Such augmented training datasets can be used for modification of algorithms aimed at improving their quality. The level of confidentiality of data in the process of their accumulation and generalization at the stage of operation of artificial intelligence systems can increase;
- the versatility of AI algorithms makes it possible to use them to automate complex data processing tasks that cannot be solved using only fully interpretable algorithms. This leads to a significant increase in the level of automation of information processes in modern society and, as a consequence, to delegation to AI systems of a significant number of data processing tasks previously performed manually by humans, with a corresponding shift of responsibility for incorrect actions on data processing from the human operator to other subjects of law. This circumstance allows us to refer AI to technologies for which the issue of social acceptability of application is particularly acute;
- if AI systems are designed to automate the processes of intellectual data processing previously performed manually by a human, it should be possible to compare the quality characteristics of the AI algorithms used and the functional capabilities of a human (a representative group of qualified operators).

As a result, the effective implementation and practical application of AI technologies involves the following tasks:

- ensuring guarantees of functional reliability and predictability of the behavior of AI systems in real operating conditions, systems resistance to the impact of specific information attacks on processed data (e.g., so-called “adversarial” attacks) based on the creation of a system for the AI systems conformity assessment with the established requirements;
- access of a wide community of developers to training datasets containing confidential and other information of limited distribution. Development of methods and means of guaranteed “declassification” of datasets (irreversible deletion of confidential information, including personal data) with preservation of the possibility of their use for creation of AI systems;
- development of procedures for monitoring the quality of AI systems during their additional training in the process of operation;
- development of methods and means of assessing and confirming the safety of AI systems in relation to third parties (not directly involved in the operation of the systems) in their use, including:
- ensuring the physical safety of AI systems for surrounding people, the natural environment and tangible assets (e.g. in the case of unmanned transport);
- protection of data accumulated in AI systems in the course of their operation;
- assessing the ethical implications of the use of AI systems;
- ensuring a sufficient level of environmental safety of AI systems and others;
- development of unified mechanisms for guaranteed quality assurance of AI systems when automating applied intellectual tasks of data processing, previously performed manually.

Regulatory and technical regulation is one of the directions of solving the above-mentioned and other tasks related to the practical implementation of AI technologies. Thus, in accordance with subparagraph “d” of paragraph 34 of the Russian Strategy for the Development of AI until 2030, one of the main directions of design and development of software that uses AI technologies (one of the tasks of the Strategy) is the development of national standards in the field of security (including fault tolerance) and software compatibility, reference architectures of computing systems and software, as well as the definition of criteria for comparing software and hardware.

Also, according to paragraph 49 of the Strategy, one of the main directions of creating a comprehensive system for regulating public relations arising in connection with the development and implementation of AI technologies (also one of the objectives of the Strategy) is to create unified systems of standardization and conformity assessment of technological solutions developed on the basis of AI, to develop international cooperation on

standardization issues and to ensure the possibility of certification of products, works and services, that created by Russia.

When developing the Program, the following general requirements were imposed on the set of normative and technical documents in the field of AI

:

- completeness: standards should address fundamental issues and remove existing regulatory and technical barriers to the creation and application of AI systems;
- timelessness: standards should focus on special issues of creation and application of AI technologies, minimally affecting other aspects of standardization, not duplicating existing normative-technical and regulatory legal documents;
- consistency: compatibility with national and international information technology standards should be ensured;
- demand: a rational level of interest of domestic developers and consumers of AI systems, relevant Russian executive authorities, research, educational and other organizations in the use of developed standards should be ensured.

In addition, when preparing the Program, it was taken into account that at this stage of development of the "Artificial Intelligence" direction, the standards to be developed should not impose excessive restrictions on the ways of implementation of AI systems, limiting themselves, if necessary, to the description of the best domestic and world practices of creating AI systems designed to solve specific applied intellectual tasks.

The Program envisages the development of the following types of standards:

- standards establishing requirements to the processes of external design of AI systems (justification of tactical and technical requirements and envisaged conditions of operation of AI systems, ensuring information interfacing with other information systems);
- standards for control methods that take into account the peculiarities of evaluating the functional and social acceptance characteristics of information systems based on uninterpretable algorithms;
- standards that establish unified approaches to the assessment of functional capabilities (competences) of a human operator when solving typical applied tasks of AI;
- standards in the field of unification of terminology, data and software used in AI systems, defining the stages of the life cycle of systems, universal principles of work organization during the creation and operation AI systems;
- standards in the field of information security in AI systems (mainly privacy).

Standards for control methods and standards for assessment of functional capabilities of human operators may include fragments of demonstration datasets, descriptions of test scenarios and other data illustrating peculiarities of testing of AI algorithms and assessment of functional capabilities of operators taking into account the variability of external conditions in which the relevant applied tasks of AI are supposed to be solved in practice (essential factors of operation).

When updating the Program, international and regional standardization documents in the field of AI developed within the following organizations were taken into account:

- Subcommittee SC42 "Artificial Intelligence";
- International Telecommunication Union (ITU);
- Institute of Electrical and Electronics Engineers (IEEE);
- European Telecommunications Standards Institute (ETSI);
- Joint Technical Committee of the European Committee for Standardization and the European Committee for Standardization in Electrical Engineering CEN/CLC/JTC 21 "Artificial Intelligence".

In accordance with the standard of the Russian GOST R 1.7-2014 "Standardization in the Russian Federation. National standards. Rules of design and designation in development on the basis of international standards" under harmonized standards are understood identical and modified standards. In addition, the Program intends to develop non-equivalent standards, allowing a complete revision of the text of the standard. The form of application of the standard in the development of each specific national standard will be determined in the formation of Russian Standardization Programs for the next year.

The program also envisages standardization support, within the framework of which profile domestic experts will prepare and submit to the Russian Ministry of Economic Development, Rosstandart and other interested federal executive authorities and organizations analytical reports, including:

- information on the initiatives of the national delegations, including Russian initiatives;
- the results of the analysis of possible risks and opportunities associated with the development and adoption of the document on standardization, taking into account Russian public interests;
- proposals to the Program of national standardization for the next year, related to the development of this standardization document.

Goal and objectives of the Program. The purpose of the Program is to increase the efficiency of creation and practical application of AI technologies in various branches of the economy and social sphere through the development and implementation of a set of technical standards in the field of AI.

The main objectives of the Program are:

- consolidation in Russian normative and technical documents of unified principles for conformity assessment with the requirements in the field of functional characteristics and characteristics of social acceptability of applied AI systems, taking into account the peculiarities of the development and operation of these systems;
- formation of the normative and technical basis of the Russian system for assessing the conformity of applied AI systems with the requirements;
- ensuring the required level of harmonization of Russian standards with international normative and technical documents in the field of AI;
- providing and keeping up-to-date a set of standards ensuring effective integration of AI systems into the Russian information infrastructure while maintaining a sufficient level of functional and structural compatibility at the international level.

General issues of quality and unification of Artificial Intelligence systems

GOST R 59276-2020 Artificial intelligence systems. Ways to ensure trust. General provisions

GOST R 59277-2020 Artificial intelligence systems. Classification of artificial intelligence systems

GOST R 59898-2021 Quality assessment of artificial intelligence systems. General provisions

GOST R 59925-2021 Information technologies. Big data. Technical task. Requirements for content and design

GOST R 59926-2021 Information technologies. Big data reference architecture. Part 2: Use cases and derived requirements

GOST R 70462.1-2022 Information technologies. Artificial intelligence. Evaluation of the robustness of neural networks. Part 1. Overview

GOST R 70466-2022 Information technologies. Big data reference architecture. Part 1. Structure and application process

GOST R ISO/IEC 20546-2021 Information technology. Big data. Overview and dictionary

GOST R ISO/IEC 24668-2022 Information technology. Artificial intelligence. Big Data Analytics Process Management Framework

PNST 553-2021 Information technology. Artificial intelligence. Terms and Definitions

Transport

GOST R 58776-2019 Means for monitoring the behavior and predicting the intentions of people. Terms and Definitions

GOST R 59391-2021 Means for monitoring behavior and predicting people's intentions. Hardware and software using artificial intelligence technologies for wheeled vehicles. Classification, purpose, composition and characteristics of photo and video recording tools

GOST R 59879-2021 Ergonomics. Design and application of speech technology tests. Method for determining the quality indicators of recognition of voice control commands

GOST R 59880-2021 Ergonomics. Design and application of speech technology tests. Methodology for determining the quality indicators of speech synthesis by text

GOST R 70249-2022 Artificial intelligence systems in road transport. Highly automated vehicles. Terms and Definitions

GOST R 70250-2022 Artificial intelligence systems in road transport. Use cases and composition of functional subsystems of artificial intelligence

GOST R 70251-2022 Artificial intelligence systems in road transport. Vehicle traffic control systems. Requirements for testing algorithms for detection and recognition of obstacles

GOST R 70252-2022 Artificial intelligence systems in road transport. Vehicle traffic control systems. Requirements for testing low-level data fusion algorithms

GOST R 70253-2022 Artificial intelligence systems in road transport. Vehicle traffic control systems. Requirements for testing algorithms for detecting and reconstructing the structure of intersections

GOST R 70254-2022 Artificial intelligence systems in road transport. Vehicle traffic control systems. Requirements for testing algorithms for predicting the behavior of road users

GOST R 70255-2022 Artificial intelligence systems in road transport. Vehicle traffic control systems. Requirements for testing algorithms for detecting and recognizing road signs

GOST R 70256-2022 Artificial intelligence systems in road transport. Vehicle traffic control systems. Requirements for testing curb and lane control algorithms

GOST R 58777-2019 Air transport. Airports. Technical means of inspection. Method for determining the quality indicators of recognition of illegal investments by shadow x-ray images

PNST 554-2021 Intelligent transport systems. Artificial intelligence systems for automating the control of motor vehicles. Test methods. General provisions

PNST 555-2021 Intelligent transport systems. Artificial intelligence systems for automating the control of motor vehicles. Classification and general technical requirements

Education

GOST R 59895-2021 Artificial intelligence technologies in education. General provisions and terminology

GOST R 59896-2021 Educational products with artificial intelligence algorithms for adaptive learning in general education. Requirements for teaching materials

GOST R 59897-2021 Data for artificial intelligence systems in education. Requirements for the collection, storage, processing, transfer and protection of data

GOST R 59899-2021 Educational products with artificial intelligence algorithms for adaptive learning in general education. Technical requirements

GOST R 59900-2021 Artificial intelligence systems. Standard requirements for control samples of initial data for testing artificial intelligence systems in education

Safety

GOST R 59385-2021 Information technologies. Artificial intelligence. Situational video analytics. Terms and Definitions

Agriculture

GOST R 59920-2021 Artificial intelligence systems. Artificial intelligence systems in agriculture. Requirements for ensuring the operational safety characteristics of automated control systems for the movement of agricultural machinery

Healthcare

GOST R 59921.0-2022 Artificial intelligence systems in clinical medicine. Key points

GOST R 59921.1-2022 Artificial intelligence systems in clinical medicine. Part 1. Clinical evaluation

GOST R 59921.2-2021 Artificial intelligence systems in clinical medicine. Part 2. Program and methodology of technical tests

GOST R 59921.3-2021 Artificial intelligence systems in clinical medicine. Part 3. Change management in artificial intelligence systems with continuous learning

GOST R 59921.4-2021 Artificial intelligence systems in clinical medicine. Part 4: Evaluation and monitoring of operational parameters

GOST R 59921.5-2022 Artificial intelligence systems in clinical medicine. Part 5. Requirements for the structure and order of using a data set for training and testing algorithms

GOST R 59921.6-2021 Artificial intelligence systems in clinical medicine. Part 6. General requirements for operation

GOST R 59921.7-2022 Artificial intelligence systems in clinical medicine. Algorithms for the analysis of medical images. Test methods. General requirements

GOST R 59921.8-2022 Artificial intelligence systems in clinical medicine. Part 8. Guidelines for the application of GOST ISO 13485-2017

GOST R 59921.9-2022 Artificial intelligence systems in clinical medicine. Algorithms for data analysis in clinical physiology. Test methods. General requirements

PNST 777-2022 Artificial intelligence systems in clinical medicine. Part 10: Life cycle processes

Remote Sensing

GOST R 70321.1-2022 Artificial intelligence technologies for processing Earth remote sensing data. Algorithms of artificial intelligence for recognition of buildings on satellite images received from spacecrafts of optical-electronic observation. Typical test procedure

GOST R 70321.2-2022 Artificial intelligence technologies for processing Earth remote sensing data. Artificial intelligence algorithms for determining the types of residential buildings on satellite images obtained from optical-electronic surveillance satellites. Typical test procedure

GOST R 70321.3-2022 Artificial intelligence technologies for processing Earth remote sensing data. Artificial Intelligence Algorithms for Estimating the Area of Residential Buildings on Satellite Images Obtained from Optoelectronic Observation Spacecraft. Typical test procedure

GOST R 70321.4-2022 Artificial intelligence technologies for processing Earth remote sensing data. Artificial intelligence algorithms for recognizing buildings under construction on satellite images obtained from optical-electronic surveillance spacecraft. Typical test procedure

GOST R 70321.5-2022 Artificial intelligence technologies for processing Earth remote sensing data. Artificial Intelligence Algorithms for Determining the Characteristics of Tree and Shrub Vegetation on Satellite Images Obtained from Optoelectronic Observation Spacecraft. Typical test procedure

GOST R 70321.6-2022 Artificial intelligence technologies for processing Earth remote sensing data. Artificial Intelligence Algorithms for Recognizing Road Transport Network Objects on Satellite Images Obtained from Optoelectronic Observation Spacecraft. Typical test procedure

GOST R 70321.7-2022 Artificial intelligence technologies for processing Earth remote sensing data. Artificial Intelligence Algorithms for Determining the Types of Road Transport Network Objects on Satellite Images Obtained from Optoelectronic Observation Spacecraft. Typical test procedure

Section 5: Approaches of Russia and India to Artificial Intelligence Ethics

International Standards and Approaches to Artificial Intelligence Ethics:

1. IEEE Global initiative (URL: <https://standards.ieee.org/industry-connections/ec/autonomous-systems/>)
2. OECD Principles on Artificial Intelligence: These principles outline seven key ethical considerations for AI development and deployment. (URL: <https://www.oecd.org/digital/artificial-intelligence/>)
3. UNESCO Recommendation on the Ethics of Artificial Intelligence: This recommendation provides a comprehensive framework for ethical AI development and implementation. (URL: <https://www.unesco.org/en/artificial-intelligence/recommendation-ethics#:~:text=Privacy%20must%20be%20protected%20and,frameworks%20should%20als%20be%20established.&text=International%20law%20%26%20national%20sovereignty%20must,inclusive%20approaches%20to%20AI%20governance.>)
4. CIS Recommendations for Regulatory Regulation of the Use of AI, including Ethical Standards for Research and Development (URL: https://iacis.ru/novosti/postoyannye_komissii/parlamentarii_stran_sng_prinyali_rekomendacii_po_regulirovaniyu_ispolzovaniya_iskusstvennogo_intellekta)
5. Standards for AI Governance: International Standards to Enable Global Coordination in AI Research & Development (URL: https://www.fhi.ox.ac.uk/wp-content/uploads/Standards_-FHI-Technical-Report.pdf)

India's Engagement in International Artificial Intelligence Ethics Discussions

India actively participates in international AI ethics discussions, including:

1. G20 AI Principles for Responsible Use of Artificial Intelligence: India contributed to these principles, emphasizing ethical considerations in AI development and deployment.
2. OECD AI Roundtable: India regularly participates in this forum to discuss AI ethics and share best practices.
3. UNESCO Expert Group on AI and Education: India is a member of this group, providing guidance on ethical AI use in education.
4. Partnership on AI (PAI): India is a member of this global initiative promoting responsible AI development

and deployment.

As per the report which maps the discussions or frameworks that have been adopted by the governments of various nations to address the ethical issues around the AI systems and technology, India is at '[Level 3 – Established Policy Position](#)'.

(Following are the various Levels:

Level 1: No discussion; No preliminary or introductory discussion regarding various aspects of AI (such as transparency, privacy, ethics etc) have taken place between the government and other stakeholders in the AI ecosystem

Level 2: Preliminary Discussion; Basic introductory level of discussion has taken place where stakeholders debate the pros and cons of the various aspects of AI

Level 3: Established Policy Position; After repeated rounds of discussion, the government and other stakeholders have agreed upon common policy prescriptions that benefits the society as a whole

Level 4: Policy Recommendations; Based on discussions and learnings, government and stakeholders lay down specific policy recommendations for enterprises/organizations to follow

Level 5: Implementation into Legislation; Based on the success of the recommendations, the government formalizes policies into legislation that needs to be followed. This is the highest level of maturity where the government has acquired knowledge and understanding of the aspects of AI)

[Russian Artificial Intelligence Ethics Code](#)

AI Ethics Code (accepted October 26, 2021)

It is a unified system of recommendatory principles and rules designed to create an environment for the trusted development of AI technologies in Russia and applies only to civilian developments. Joining is carried out on a voluntary basis.

More than 360 participants from 20 jurisdictions.

Representatives:

- business
- education
- states
- non-profit organizations
- startups

AI Ethics Code establishes general ethical principles and standards of conduct to be followed by those involved in activities in the field of AI (AI Actors) in their actions, as well as the mechanisms of implementation of Code's provisions.

The Code applies to relations that cover ethical aspects of the creation (design, construction, piloting), integration and use of AI technologies at all stages, which are currently not regulated by the national legislation and international rules and/or by acts of technical regulation.

The recommendations of this Code are designed for AI systems used exclusively for civil (nonmilitary) purposes.

The provisions of the Code may be expanded and/or specified for individual groups of AI Actors in sectorial or local documents on ethics in the field of AI considering the development of technologies, the specifics of the tasks being solved, the class and purpose of AI systems and the level of possible risks, as well as the specific context and environment in which AI systems are being used.

Declaration on the responsible export of AI technologies and software based on them
(accepted November 23, 2023)

It is a set of ethical principles and standards of behavior that should guide developers when exporting their own solutions based on AI, which was adopted as a development and continuation of the Code of Ethics in the Field of AI and in addition to the Federal Law of July 18, 1999 No. 183-FZ "On Export Control" " Joining is on a voluntary basis.

Total 7 participants:

- FSTEC
- MDG
- Yandex
- Vision Labs
- Sber
- Sber Business Software
- SberMedAI

Ethical guidelines for the use of AI-based recommendation technologies and algorithms in digital services
(published September 19, 2023)

It is a recommendation document that was adopted as a development and continuation of the Ethics Code in the field of AI, designed to systematize ethical practice and summarize approaches that are acceptable and recommended for use in the development and configuration of recommendation algorithms, as well as in the implementation and operation of personalized recommendations functionality in digital services of various types. Recommendations are offered for voluntary implementation by companies using recommendation systems in digital services.

Indian Standards and Approaches to Artificial Intelligence Ethics.

India's approach to AI ethics encompasses national policies, industry standards, and multi-stakeholder collaborations.

Key initiatives include:

1. National Policy for Artificial Intelligence (2019): This policy outlines India's vision for AI development and emphasizes ethical considerations, focusing on human-centricity, fairness, accountability, and transparency. (URL: <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>)
2. NISQ Guidelines for AI: These guidelines address the safety, reliability, and trustworthiness of AI systems, covering aspects such as data privacy, security, and explainability. (URL: <https://negd.gov.in/>)
3. Bureau of Indian Standards (BIS) Standards for AI: These standards ensure AI applications meet stringent safety and performance requirements, particularly in areas like healthcare. (URL: https://www.services.bis.gov.in/tmp/WCLITD38620717_12102022_1.pdf)
4. AI Conformity Assessment Framework: This framework proposes a systematic evaluation mechanism to ensure AI systems adhere to ethical standards before deployment. (URL: <https://indianexpress.com/article/cities/ahmedabad/ethics-robust-governance-framework-ai-accountability-essential-cyient-chairman-8867051/>)