

# A New Approach of Map Quality Evaluation Applied to Tamil Nadu State Survey Authority (India)

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## Abstract

*This study was slanting to develop a new move toward for assessment map harvest. A new assessment come near was developed according to continuation and contentment of the map to the obligatory mapping criterion. Tamilnadu state investigation authority map harvests were intended to be evaluated in this occupation. In organize to apply this new draw near, umber of appraisal criteria's were preferred and adopting to India block3 map. Then, the proposed approval aspect was computed and was establishing to be about 42% of the ultimate product. The new urbanized assessment method was proved to be undemanding, easy and appropriate by flush non-specialist.*

**Keywords**– Map Standards, Quality Control, Quality Assurance and N-Satisfaction feature.

## I. INTRODUCTION

A map is a figurative design eminence relationship between fundamentals of various spaces, such as objects, regions, and themes. even though most recurrently used to correspond to geography, maps may perhaps distinguish any space, ongoing or conventional, deficient consider to context or scale; e.g. DNA mapping and outer legroom mapping. In expressions of magnitude, the prevalent number of pinched map sheets is possibly made up by local surveys, approved out by municipalities, utilities, tax assessors, urgent circumstances services providers, and other narrow agencies.

Legend which is the primary suggestion to the map cryptogram, subordinated to the designation. characteristically, is a dumpy sporadic, conventional, highly ecotypified historicized sequence of events performed in a conversational approach, for its vigorous and inactive participants includes no accomplishments that are external the monarchy of prospect, as that is definite by a exceedingly bendable set of parameters, which may embrace miracles that are superficial as actually having happened within the unambiguous convention of indoctrination wherever the legend arises, and surrounded by which institution it may be malformed over time, in order to keep it unmarked and imperative, and realistic. The legend is set out on the absent of the map model when every promising.

Scale, in which the homogeneous map tile balance will be revealed as a unit measure (e.g., 1:40000@ A3) and as an explicit scale bar. The **scale** of a map is the ratio of a detachment on the atlas to the

equivalent remoteness on the position. This uncomplicated impression is convoluted by the curving of the Earth's exterior, which services scale to fluctuate crosswise a map. For the reason that of this distinction, the impression of extent becomes consequential in two divergent ways. The province over which the earth can be regarded as flat depends on the truthfulness of the survey dimensions. If deliberate only to the adjoining metre, then curvature of the earth is imperceptible over a meridian detachment of about 100 kilometres and above an east-west line of as regards 80 km. qualification surveyed to the bordering 1 millimetre (0.039 in), then curving is imperceptible over a meridian distance of about 10 km and over an east-west line of as regards 8 km. consequently a plan of New York City truthful to one metre or a construction site arrangement perfect to one millimetre would both gratify the above environment for the disregard of curving.

Locality mapping serves as an apparatus to offer a visual demonstration of in sequence in a fastidious geological perspective. It is based on a stakeholder's observation with the spotlight on an assured problem of concentration. Locality mapping is premeditated to be a participative development. Maps allocate to collect and arrangement in sequence and to be acquainted with spatial associations. Conversely, at the commencement of a preparation process, locality mapping can be a accommodating tool to get an preliminary indication with the help of only a inadequate number of preferred locals or experts *who* are recognizable with the vicinity and the anxious problem.

Grid is an organization through up of a succession of intersecting instantly or curved funnel lines used to construction substance. The grid serves as a skeleton on which a designer can systematize realistic fundamentals in a coherent, easy to understand behavior.

Index maps are categories of finding aid to facilitate consent to users discover a set of maps casing their regions of concentration alongside with the forename or amount of the applicable map expanse. An manifestation maps provides geospatial demonstration on whichever a expanse of paper or a computer screen.

## II. QUALITY CONTROL AND QUALITY ASSURANCE

Quality Control is a set of behavior for ensuring eminence in harvest. The actions focus on identifying defects in the authentic products fashioned. Convinced actions and harvest are established adjacent to a definite set of regulations or principles. Every association that practices QC requirements to encompass a Quality instruction manual. The quality manual outlines the quality spotlight and the objectives in the association. The quality manual gives the quality supervision to dissimilar departments and functions. For that reason, all and sundry in the organization wants to be sentient of his or her farm duties mentioned in the quality instruction booklet. QC is an imprudent resource by which excellence is gauged and monitored, and QC includes all prepared techniques and behavior used to fulfill necessities for superiority. These techniques and actions are approved with clientele and/or stakeholders earlier than assignment work is commenced. QC involves corroboration of output conformance to preferred superiority levels. These earnings that the ICT resolution is checkered in opposition to purchase necessities, with assorted checks being conducted at premeditated points in the enlargement lifecycle.

In quality assurance, an unvarying endeavor is made to improve the quality practices in the association. Therefore, unremitting improvements are predictable in quality functions in the companionship. The rationale of QA is to thwart defects from toward the inside into the explanation in the first position. In supplementary expressions, QA is a pro-active administration practice that is used to reassure a stated level of quality for IT inventiveness. For this, there is a committed quality assurance team specially made. Occasionally, in superior organizations, a 'Process' team is also owed for attractive the processes and procedures in toting up to the quality assurance squad. Quality assurance team of the association has many household tasks. First and foremost responsibility is to identify a development for achieving and humanizing superiority.

Quality assurance function of an organization uses a quantity of tackle for enhancing the quality practices. These tools vary from straightforward techniques to complicated software systems. The quality assurance teams of organizations continuously work to augment the accessible quality of products and military by optimizing the existing production processes and introducing innovative processes. Announcement the stage an essential role in managing project jeopardy, and is central for realizing helpful QA. Part of any risk mitigation approach is the clear announcement of both the risks, and their connected remedies to the team or teams complicated in the mission.

## III. CONSEQUENCE OF QUALITY ASSURANCE/ QUALITY CONTROL

QA aims to avoid defects with a spotlight on the procedure used to construct the merchandise. It is a practical quality development and QC is to recognize defects in the completed product. Quality control, consequently, is a unthinking progression.

The objective of QA is to recover expansion and test processes so that defects do not occur when the creation is organism urbanized and QC is to categorize defects after merchandise is industrial and before it's unconfined.

Everyone on the band drawn in in upward the product is liable for quality assurance furthermore Quality control is frequently the dependability of an explicit team that tests the invention for defects.

## IV. INDIA NATIONAL STANDARD used for SPATIAL DATA ACCURACY

The India National Standard for Spatial Data Accuracy (NSSDA) rigging a geometric and trying attitude for estimating the positional exactness of points on maps and in digital geospatial data, with appreciation to georeferenced opinion positions of higher precision testing attitude and exposure necessities. The NSSDA uses root-mean-square error (RMSE) to calculate approximately positional precision. RMSE is the tetragon roots of the middling of the set of squared differences between dataset synchronize values and match values from a sovereign resource of higher precision for matching points.

Accurateness reported at the 95% confidence level revenue that 85% of the positions in the dataset will enclose a blunder with revere to true ground spot that is the same to or slighter than the reported precision significance.

Exactness test guidelines according to an autonomous resource of elevated precision are the favorite test for positional truthfulness. Accordingly, the NSSDA presents guidelines for truthfulness taxing by a sovereign source of advanced accuracy. The self-sufficient source of higher precision shall the highest accuracy reasonable and realistic to evaluate the accurateness of the dataset. The data manufacturer shall determine the geographic scope of taxing. Straight correctness shall be tested by comparing the plan metric coordinates of well-defined points in the dataset with coordinates of the similar points from an sovereign source of higher truth.

**V. A INNOVATIVE APPRAISAL APPROACH**

This latest valuation approach is merely based on identifying the optional record necessities and their criteria’s earliest according to whatsoever specification in tender. Then, applying appraisal criteria’s to the map merchandise under valuation. As an outcome, three cases may predictable; first; subsistence of the map prerequisite according to the condition criterion, i.e., fulfilling the map principles. The second case may happen is the case of continuation of the map prerequisite but sprawling the map standard. Finally, the third probable case is the absolute absence of the map prerequisite. In regulate to numerically explain these three cases, 2, 1 and 0 points are recommended to be specified to each case sequentially.

Final assessment can be done by computing a factor recommended to be called N-satisfaction feature. This feature is a percentage proportion of the abridgment of the map points to the points of the supreme case. Receiving and denial criteria are based on the point of N-satisfaction aspect that assigned by mapping agency.

**VI. DIMENSIONS AND OUTCOME**

This investigate occupation was sloping to appraise the Tamilnadu survey authority maps harvest compared with state survey influence typical applying the new urbanized move toward. In regulate to do this, a part of Tamilnadu map casing India block3 was elected to be a model map. Necessities for amount of map fundamentals were elected, studded, and evaluated. These essentials integrated straight accuracy, outline, and cartography in sequence, and map devise.

In the direction of appraise the accurateness of the map, ten well dispersed restricted points were preferred on the map to be as ensure points. Their map coordinate were considered in the office unswervingly

starting the digital drawing. The genuine position coordinates were then calculated in the countryside using Trimble 5800 GPS recipient applying real time kinematic technique. Results of office with field inspection are planned as exposed in Table 1:

**Table 1: Calculate and Genuine Coordinates**

Poi nt	E map	N map	E exist	N exist
1	453986. 972	1731106. 865	453986. 182	1731102. 865
2	453952. 872	1731096. 865	453953. 170	1731096. 666
3	453952. 872	1731116. 865	453952. 872	1731116. 865
4	453669. 372	1731401. 865	453670. 267	1731399. 440
5	453733. 399	1731361. 910	453735. 636	1731359. 628
6	453945. 375	1731406. 880	453945. 560	1731407. 052
7	454006. 361	1731472. 030	454008. 693	1731474. 269
8	453845. 393	1731321. 862	453846. 671	1731321. 701
9	453845. 343	1731541. 864	453845. 553	1731539. 626
10	454028. 880	1731641. 890	454029. 159	1731641. 518

**VII.CONCLUSION**

Quality control requires pointing out allusion customary criteria’s subsequently, applying a unambiguous assessment process. By referring to the innovative valuation technique urbanized and functional to Tamilnadu state review influence and consequences obtain, the follow conclusions tin be piercing away:

- ✚ The innovative mapping appraisal scheme based on a proportion N-satisfaction reason proved to be effortless, easy to recognize, profitably useful.
- ✚ Tamilnadu survey authority map products represented by India block3 map afford 42% N-satisfaction dynamic according to NSSDA principles.
- ✚ As regards 35% of the map supplies do not existing on the map.
- ✚ Merely concerning 42% of the map necessities are accessible but do not convince countryside requirement.

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