REPORT ON THE SYSTEM ENGINEERING APPROACH: PART TWO (MISSING)

The Mother took the decision to build the Galaxy in five years, adopting the system engineering, after going through the 22 pages report summarising the discussion in Roger Anger's office, Paris, from 18 to 25 November 1968, with Dr. Sidney Firstman, who represented the Planning Research Corporation, California.

This is part of the photocopied documentation I personally received in 1987 from Suresh Hindocha who, at that time a 26 years old electronic engineer, launched and coordinated the initiative with Mother's blessings. The folder was transmitted to the Auroville Archive, but I have a copy.

The Paris report was entirely typed in capital letter, to facilitate the access to the Mother. In the previous posting (https://auroville.org.in/blog/paulette/100519) I have reproduced Gilles Guigan's conversion of the original PDF report into ordinary Word, retaining capitalisation only to begin a sentence. However, in Gilles's version Part II, "The systems engineering approach", 7 pages, is missing. I reproduce it below in its original form, fully capitalised.

What obviously impressed me, when first I read Part Two nearly forty years ago, was Dr. Firstman defining system engineering as being *"concerned with planning, developing and implementing a town in a manner that achieves the goals established for the town, with the least expenditure of resources (money, materials)."*

Also struck me, when describing the construction phase, is *"the construction of the town can proceed on a factory assembly line production principle so that it can rapidly be implemented"*. In 1968! And further below: *"During this phase it could also be determined what people to attract to the town and how to attract them, this would result into an anticipated population profile and a plan for attracting the preferred people."*

Apropos "the preferred people", which in Part Two recurs twice, it should be noted that seven months earlier, on 13 April 1968, the Mother had approved Auromodel, an enclave of 2-3000 people needed to house the people who would build the town, but also to experiment with planning, construction, organisation etc.

So we do know what town the Mother wished to build, with the help of people who had just cooperated with NASA in sending the first astronauts to the moon! And whom the Government of India, in 1971, requested the United Nations to contact again!

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During the town concept phase a study to assess the economic potential of the Auroville area to support industry, agriculture and people can be carried out, this would give out a town feasibility analysis. On this basis we can determine preferred industry, commerce, agriculture and other economic activities such that this would be our preliminary economic activity plan. …

During the conceptual design phase funding acquisitions and commitments would be continuing activities from the previous phases, but to determine inducements for specific economic activities (factories, stores et cetera) it would require of the town tax benefits, subsidies et cetera. Also planning for the integration of the town into the regional economy, the transport network and the social structure

can be carried out, such that we would have a regional integration plan with its design and planning requirements.

During this phase it could also be determined what people to attract to the town and how to attract them, this would result into an anticipated population profile and a plan for attracting the preferred people. …

(6) CONSTRUCTION PHASE (5 YEARS)

During this phase bids for construction are evaluated, and technical direction of construction is in process to yield the actual physical elements of the town. There would be maintained controls on construction timing, on resources flow, design specification, and relationships between functions. This would then result in minimum cost construction. In fact the construction of the town can proceed on a factory assembly line production principle so that it can rapidly be implemented.

Plans could be made for provisioning the town, for training social and service personnel, and staffing various activity organisations. This would yield minimum cost provisioning plan, and integrated staffing and training plan.

By preparing our own software for integrated data system, we would have data system collection, processing plan and computer programmes.

At this stage the town could be publicized for attracting the preferred population.

DR. FIRSTMAN DEFINES SYSTEM ENGINEERING IN THIS CASE AS BEING "CONCERNED WITH PLANNING, DEVELOPING AND IMPLEMENTING A TOWN IN A MANNER THAT ACHIEVES THE GOALS ESTABLISHED FOR THE TOWN, WITH THE LEAST EXPENDITURE OF RESOURCES (MONEY, MATERIALS). IN THIS PROCESS A TOWN IS CONCEIVED OF AS A COLLECTION OF ORGANISATIONS, ACTIVITIES, PHYSICAL ENTITIES THAT RELATE AND WORK TOGETHER IN WAYS THAT PRODUCE THE TOWN'S FUNCTIONS AND LIFESTYLES."

Dr. Firstman defines system engineering in this case as being “concerned with planning, developing and implementing a town in a manner that achieves the goals established for the town, with the least expenditure of resources (money, materials).

THERE ARE SEVEN PHASES IN SEQUENCE WHICH COVER THE PROJECT FROM THE BEGINNING TILL ITS CONSTRUCTION IS COMPLETED.

DURING THE TOWN CONCEPT PHASE A STUDY TO ASSESS THE ECONOMIC POTENTIAL OF THE AUROVILLE AREA TO SUPPORT INDUSTRY, AGRICULTURE AND PEOPLE CAN BE CARRIED OUT, THIS WOULD GIVE OUT A TOWN FEASIBILITY ANALYSIS. ON THIS BASIS WE CAN DETERMINE PREFERRED INDUSTRY, COMMERCE, AGRICULTURE, AND OTHER ECONOMIC ACTIVITIES SUCH THAT THIS WOULD BE OUR PRELIMINARY ECONOMIC ACTIVITY PLAN.

During the town concept phase a study to assess the economic potential of the Auroville area to support industry, agriculture and people can be carried out, this would give out a town feasibility analysis. On this basis we can determine preferred industry, commerce, agriculture and other economic activities

such that this would be our preliminary economic activity plan.

DURING THE CONCEPTUAL DESIGN PHASE FUNDING ACQUISITION AND COMMITMENTS WOULD BE CONTINUING ACTIVITIES FROM THE PREVIOUS PHASES, BUT TO DETERMINE INDUCEMENTS FOR SPECIFIC ECONOMIC ACTIVITIES (FACTORIES, STORES, ET CETERA) IT WOULD REQUIRE OF THE TOWN TAX BENEFITS, SUBSIDIES ET CETERA. ALSO PLANNING FOR THE INTEGRATION OF THE TOWN INTO THE REGIONAL ECONOMY, THE TRANSPORT NETWORK AND THE SOCIAL STRUCTURE CAN BE CARRIED OUT, SUCH THAT WE WOULD HAVE A REGIONAL INTEGRATION PLAN WITH ITS DESIGN AND PLANNING REQUIREMENTS.

DURING THIS PHASE IT COULD ALSO BE DETERMINED WHAT PEOPLE TO ATTRACT TO THE TOWN AND HOW TO ATTRACT THEM, THIS WOULD RESULT IN AN ANTICIPATED POPULATION PROFILE AND A PLAN FOR ATTRACTING THE PREFERRED PEOPLE.

During the conceptual design phase funding acquisitions and commitments would be continuing activities from the previous phases, but to determine inducements for specific economic activities (factories, stores et cetera) it would require of the town tax benefits, subsidies et cetera. Also planning for the integration of the town into the regional economy, the transport network and the social structure can be carried out, such that we would have a regional integration plan with its design and planning requirements.

During this phase it could also be determined what people to attract to the town and how to attract them, this would result into an anticipated population profile and a plan for attracting the preferred people.

(6) CONSTRUCTION PHASE (5 YEARS)

DURING THIS PHASE BIDS FOR CONSTRUCTION ARE EVALUATED, AND TECHNICAL DIRECTION OF CONSTRUCTION IS IN PROCESS TO YIELD THE ACTUAL PHYSICAL ELEMENTS OF THE TOWN. THERE WOULD BE MAINTAINED CONTROLS ON CONSTRUCTION TIMING, ON RESOURCES FLOW, DESIGN SPECIFICATION, AND RELATIONSHIPS BETWEEN FUNCTIONS. THIS WOULD THEN RESULT IN MINIMUM COST CONSTRUCTION. IN FACT THE CONSTRUCTION OF THE TOWN CAN PROCEED ON A FACTORY ASSEMBLY LINE PRODUCTION PRINCIPLES SO THAT IT CAN RAPIDLY BE IMPLEMENTED.

PLANS COULD BE MADE FOR PROVISIONING THE TOWN, FOR TRAINING SOCIAL AND SERVICE PERSONNEL, AND STAFFING VARIOUS ACTIVITY ORGANISATIONS. THIS WOULD YIELD MINIMUM COST PROVISIONING PLAN, AND INTEGRATED STAFFING AND TRAINING PLAN.

BY PREPARING OUR OWN SOFTWARE FOR INTEGRATED DATA SYSTEM, WE WOULD HAVE DATA SYSTEM COLLECTION, PROCESSING PLANS AND COMPUTER PROGRAMMES.

AT THIS STAGE THE TOWN COULD BE PUBLICIZED FOR ATTRACTING THE PREFERRED POPULATION.

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During this phase bids for construction are evaluated, and technical direction of construction is in

process to yield the actual physical elements of the town. There would be maintained controls on construction timing, on resources flow, design specification, and relationships between functions. This would then result in minimum cost construction. In fact the construction of the town can proceed on a factory assembly line production principle so that it can rapidly be implemented.

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