**SAMA specifications**

**Features**

- **Architecture**
- **Flexibility**
- **Capacity**
- **Validated**
- **Data exporting/reports**
- **Propagation models**
- **Interfaces**
- **Performances**
- **Statistics**

**Trade-off analysis, optimal transponder utilization, management of satellite access, fast creation satellite-based networks and links, trouble shooting, automatic measurement plan generation**

**Application communication based on standard TCP/IP stack**

**Loading, saving and merging access plans from/to the database**

**Capacity to handle a huge number of carriers, links, satellites and remote terminals**

**Models are extensively verified in lab, field and customer testing against benchmarking tools**

**Extensive set of reports and plots (ASCII, pdf); transponder status, margins, power status, carrier power spectrum, intermodulation…**

**ITU-R P propagation models, database of rain zone maps and statistics**

**SAMA native interface with Indra’s carriers monitoring system (CARMO), satellite control centers and user segment. Planned schedule can be launched and activated using measurement system**

**Provides automatic or easy manual carrier frequency allocation by several criteria (minimize C/I, optimize bandwidth, power…)**

**Minimize C/I, optimize power and bandwidth usage and allow an easy and intuitive way of managing networks**

**Pie charts, lists and pdf results**
**SAMA SATELLITE ACCESS MANAGER**

A software suite for transponder capacity and design of satellite-based networks and links

### Highlights
- Satellite database
  - Satellites
  - Terminal databases
  - Payload databases
- Graphical user interface
- Advanced tools for network management
- Visualization tool (drag and drop operations)

### Functions
- Access plan consistency analysis:
  - Number of chains per terminal
  - EIRP per terminal
  - EIRP per transponder
  - Intermodulation product analysis
  - Frequency band allocation
  - Carrier re-allocation
- Frequency/bandwidth allocation
- Intermodulation product analysis
- Carrier re-allocation
- Reports generation
- Satellite access authorisation
- Events management
- External interfaces:
  - Satellite control center
  - User segment
  - CARMO carriers monitoring system
  - Data bases management and synchronisation
- Verification of the theoretical plan created by SAMA and the real measurements performed in a CARMO monitoring workstation

### Overview
Satellite Access Manager (SAMA) is a software suite developed by Indra for planning and optimizing transponder capacity and design of satellite networks and links. It is a ground-breaking software suite that allows for planning, design, and optimization of satellite networks and links. SAMA allows users to create and manage satellite access plans, taking into account all relevant variables such as "glitches", weather conditions, and other factors that may affect the performance of the network.

SAMA uses an easy-to-use graphical user interface to manage and visualize the network, providing a clear overview of the network’s performance and status. The software suite is designed to be user-friendly and intuitive, allowing users to quickly understand and analyze the network’s behavior.

SAMA also provides detailed reports, including access plans, network usage, and performance metrics, allowing users to make informed decisions about the network’s design and operation.

### Access definition
A software suite for planning and optimizing transponder capacity and design of satellite networks and links, with a user-friendly graphical user interface and comprehensive reporting capabilities.

### Access plan reports
SAMA provides detailed reports for access planning and optimization of the network, including access plan, network capacity, and design reports. These reports are generated in a format that is easy to read and understand, allowing users to quickly and accurately make decisions about the network’s design and operation.

### Intermodulation analysis
SAMA provides detailed intermodulation analysis, allowing users to quickly and accurately understand the potential for intermodulation products and take the necessary steps to mitigate these issues.

### Access
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- Detailed reports for access planning and optimization of the network
- Intermodulation analysis
- Access plan reports

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**SAMA**

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A software suite for transponder capacity and design of satellite-based networks and links.

**Highlights**
- Access plan consistency analysis:
  - Number of chains per terminal
  - EIRP per terminal
  - EIRP per transponder
  - Intermodulation product analysis
  - Frequency/bandwidth allocation
- Carrier re-allocation
- Report generation (satellite access authorisation)
- Events management
- External interfaces:
  - Satellite control center
  - User segment
  - CARMO carriers monitoring system (import/export active access plan)
- Data bases management and synchronisation
- Verification of the theoretical plan created by SAMA and the real measurements performed in a CARMO monitoring workstation
- Multi-mission: it can cope with different satellites no matter their architectures
- Flexible implementation of International Coordination Agreements. Dynamic operational constraints management in both Tx and Rx
- Satellite controlled beam forming (access parameterisation and beam re-configuring)
- Overview of terminal deployment and assignments
--access plan reports
- Satellite database:
  - Beams
  - Transponders
  - Payload configurations
  - Connectivity
- Satellite carriers definition
- Visualization tool (drag and drop capabilities)
- Link budget analysis:
  - Graphical view
  - Huge networks management
  - Stations deployments
  - Beams visualization
  - ITU-R P models
  - EIRP checking
  - Frequency zone auto selection
- Powerful reports in pdf format
  - Export to Excel format
  - International Coordination Agreement
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- Intermodulation products graphical view
- Carriers allocation algorithms (automatic, booking…)
- Transponder statistics: IBO/OBO, bandwidth
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**Visualisation tool**

Additionally, this tool provides a very easy way to visualise and validate the functionality thanks to a dynamic view of the selected stations deployment plan.

**Access plan definition**

SAMA allows planning of multi-mission satellite access, taking all the possible variables into account (planned power consumption, international agreements, satellite profile…).

An internal validation and cross-checking is performed at both terminal and satellite resources to validate the access plan.

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**Access plan reports**

SAMA generates reports for every planned access or for the whole plan. These reports provide a comfort and easy to read way for satellite access authorisation and can be further processed to determine the efficient use of transponders and links.

**Access definition**

A software suite for transponder capacity and design of satellite-based networks and links.

**Composicion**

- **SAMA**
  - **SATELLITE ACCESS MANAGER**
  - A software suite for transponder capacity and design of satellite-based networks and links.

**Overview**

SAMA Satellite Access Manager (SAMA) is a software suite developed by Indra for planning and optimizing transponder capacity and design of satellite-based networks and links. It is a grounded tool to design more than 200 pieces of equipment providing automated IOT, payload monitoring and design of satellite control centers.

SAMA uses an easy-to-use GUI (Graphical User Interface) to design and optimize satellite access deployments. This tool can be used to plan multi-mission satellite access, taking into account the different terminals and link requirements.

SAMA allows planning of the satellite access deployment with a high level of flexibility, allowing the operator to modify the access plan and re-allocate carriers as necessary. This tool also provides a powerful reporting feature that allows the operator to generate detailed reports for satellite access authorisation.

SAMA is based on a powerful software suite developed by Indra, which has more than 20 years of experience in the field of satellite communications. This software suite is specifically designed for satellite access planning and optimization, providing a comprehensive solution for satellite operators.

SAMA allows the operator to plan and control the satellite access deployments, ensuring that the requirements of the different terminals are met. This tool also provides a powerful reporting feature that allows the operator to generate detailed reports for satellite access authorisation, ensuring that the planning process is transparent and compliant with all relevant regulations.

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**SAMA**

**SATELLITE ACCESS MANAGER**

A software suite for transponder capacity and design of satellite-based networks and links

- **Overview**
  - **Satellite Access Manager (SAMA)** is a software suite developed by Indra for planning and optimizing transponder capacity and design of satellite-based networks and links. It is grounded on Indra’s more than 20 years of experience providing automated IOT, payload monitoring and design of satellite control centers.

  - **SAMA** uses an easy-to-use online planning application to design and organize satellite network plans. The powerful and easy-to-use graphical user interface allows for quick and effective planning.

  - **Features**
    - **On-demand calculations:** SAMA can calculate with different satellite providers related attributes to ensure the best solution.
    - **EIRP and bandwidth consumption calculations:** SAMA can calculate EIRP and bandwidth consumption for different terminal deployments.
    - **Access plan consistency analysis:** SAMA can verify the consistency of access plans with respect to different terminal deployments.
    - **Frequency/bandwidth allocation:** SAMA can allocate frequency and bandwidth resources for different terminal deployments.
    - **Carrier re-allocation:** SAMA can re-allocate carriers to optimize the use of available resources.
    - **Real-time access control:** SAMA can control access to satellite transponders in real-time.
    - **Satellite database:** SAMA includes a comprehensive database of satellite transponders, beams, and service providers.
    - **Visualization tool:** SAMA can visualize station deployments and transponder coverage in a user-friendly interface.

- **Highlights**
  - **Satellite database**
    - **Beams**
    - **Transponders**
    - **Payload configurations**
    - **Connectivity**
    - **Ground stations definition**
    - **Visualization tool (drag and drop capabilities)**

  - **Link budgets**
    - **Graphical view**
    - **Huge networks management**
    - **Stations deployments**
    - **Beams visualization**
    - **ITU-R P models**
    - **QoS checking**
    - **ITU-R climbatic zones auto-selection**
    - **Powerful reports in pdf format**

  - **Intermodulation products graphical view**
  - **Carriers allocation algorithms (automatic, booking…)**
  - **Transponder statistics: IBO/OBO, bandwidth**
  - **Visualization tool**
    - **Additionally, this tool provides a very easy to use graphical interface to display the results of the analysis in real-time**
    - **Stations deployment within a plan. Stations are represented by different icons according to their type. Transponder coverage are shown or hidden upon operator criteria.**

- **Visualisation tool**
  - **SAMA allows visualising the stations deployment within a plan. Stations are represented by different icons according to their type. Transponder coverage are shown or hidden upon operator criteria.**
  - **Compatibility with different satellite providers:** SAMA can work with different satellite providers to ensure the best solution.

- **Intermodulation analysis**
  - **Optional calculation directives such as 3rd or 5th order calculation and frequency windows among others. Graphic and tabular reports. Analysis is done following several criteria for all used transponder such as:**
    - **Number of carriers**
    - **Satellite EIRP consumption**
    - **Satellite bandwidth allocation**

- **Access definition**
  - **What plan has been booked and contracted have been visualised according to a deployment plan if requested. On request and in an easy-to-use manner, capacity of a satellite access can be visualised. As access is visualised, users can identify the type of terminal, and sequential numbers. Each access will have a unique identifier for easy identification, priority, start date, and stop date.**

- **Access plan reports**
  - **SAMA generates access reports in various formats and can be used for benchmarking or quality assurance. The satellite access authorisation is generated according to the necessity.**
  - **Optional calculation directives such as 3rd or 5th order calculation and frequency windows among others. Analysed satellite transponders, EIRP and bandwidth consumption, QoS checking, and ITU-R climbatic zones auto-selection.**

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  - **Satellite database:** SAMA includes a comprehensive database of satellite transponders, beams, and service providers.
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Indra reserves the right to modify these specifications without prior notice.