Solutions for a Dynamic Marketplace

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Insurance Services Office, Inc.

Solutions for
A Dynamic Marketplace

ISO

ISO Vision

To be the recognized leader in providing information-based products and services of such value they are an integral component of our customers' critical processes and decision making.

ISO Mission

- Provide risk decision products and services enhancing the capability and productivity of our customers in functions critical to their success
- Attract and retain innovative and creative people to an encouraging work environment offering challenging and financially rewarding career opportunities
- Reward our shareholders with long-term value creation
- Develop and distribute products and services through state-of-the-art technologies
- Operate in domestic and global markets — serving customers where we can profitably deliver value
- Invest and align to build and sustain best-in-class capabilities to develop products and provide services

Values

- Honesty, integrity, ethics and individual respect in all aspects of business
- Excellence in serving customers
- Commitment, teamwork and an entrepreneurial spirit
- Individual accountability, opportunity and rewards based on merit
- Highest product quality and reliability
- Continual improvement in all that the company does — in ideas, in quality, in customer satisfaction
- Demonstrate our stewardship through responsible management of data entrusted to our care

Information

- Breadth
- Accuracy and credibility
- Delivery options

Loss Costs

- Expected losses
  - By line
  - By class
  - For specific risks

Policy Forms

- Standardized Coverage Programs
  - 18 lines of insurance available from ISO
- Latest additions
  - Employment-Related Practices Liability
  - Market Segments
  - Commercial Umbrella

Rules

- Conditions for underwriting risks
  - Territories
  - Classification definitions

ISOnet℠

- Primary delivery vehicle for ISO information
- Compatibility with company processes

Information on Specific Properties and Communities

- On-site surveys of individual properties
- Loss costs for specific properties
- Evaluation of municipalities' fire suppression capabilities
- Evaluation of municipalities building-code enforcement
- GUS: Address specific information for evaluating risks

Statistical-Agent Service

- Reports required statistics to states
- Meets other state data calls for insurers

Data Products

- Actuarial Services
- Detailed Class Information
- ISO Market Profiler / ISO Pinpoint / ISO Risk Profiler
- Workers Compensation Data Reporting Services

ISO Data Management

- Serves more than 2,900 insurers, reinsurers, brokers & risk managers
- 1.5 billion stat records per year
- 6 billion stat records stored
- Stat data bases stored up to 20 years for some lines of business
- 200,000+ claims submitted per day on line

ISO Data Management

- Protects proprietary information
- Stringent data quality and security procedures
- Systems integrity
- Regular internal and external audits

ISO Statistical Agent Functions

- Data Collection
- Front end edit maintenance
- Data base design

ISO Statistical Agent Functions

(cont'd)

- Data quality reviews
- Data Analysis
- Report system development
- Report production

ISO Data Quality

- Field edits
- Relationship edits
- Distributional edits
- Report review

What We Can Do

- Design and implement data collection systems
- Systems design and development
- Report production
- Ensure data quality
- Data and actuarial analyses

Trusted Intermediary

- Safeguards private nature of information
- Compliance with federal & state privacy legislation
- NAIC Privacy Protection Model Act

Entities Who Trust ISO

- Insurers
- NICB, Insurance Company SIU's, state fraud bureaus and the FBI
- Designated as an Advisory Organization by state regulators
- NAIC for special proprietary data studies (e.g. Closed Claim)

ISO

Who Are ISO's Experts?

- 52 Fellows and Associates of the Casualty Actuarial Society (CAS)
- CAS and IDMA members with extensive data management experience
- 80 business data managers
- 120 CPCU's
- About 370 data processing professionals

ISO

ISO Consulting Services

- Actuarial
- Policy forms and rules
- Filing and compliance

ISO Consulting Services

- Catastrophe
- Dynamic financial analysis (DFA)
- Data management
- Risk management
- Workers compensation
- Claims

Claims Information

ISOClaimSearch®

- An integrated all-claims database combines data from
  - Property Insurance Loss Register (PILR)
  - INDEX System
  - Databases acquired from National Insurance Crime Bureau
- Provides claims data in all lines of business
- Offers proactive fraud detection capabilities
  - NetMap *for Claims*
  - ViewLink Manager

  } Link analysis/data visualization tools
- Will provide access to public records through alliance with First Data Solutions.

ISO

Claims Information

A-PLUS™

- Claims information for underwriters' use in evaluating property and liability risk
- Serves personal and commercial lines
- To launch a new auto underwriting system in 2001

Technical Services

- Catastrophe-claims management
- Loss control
- Premium audit

Global Initiatives

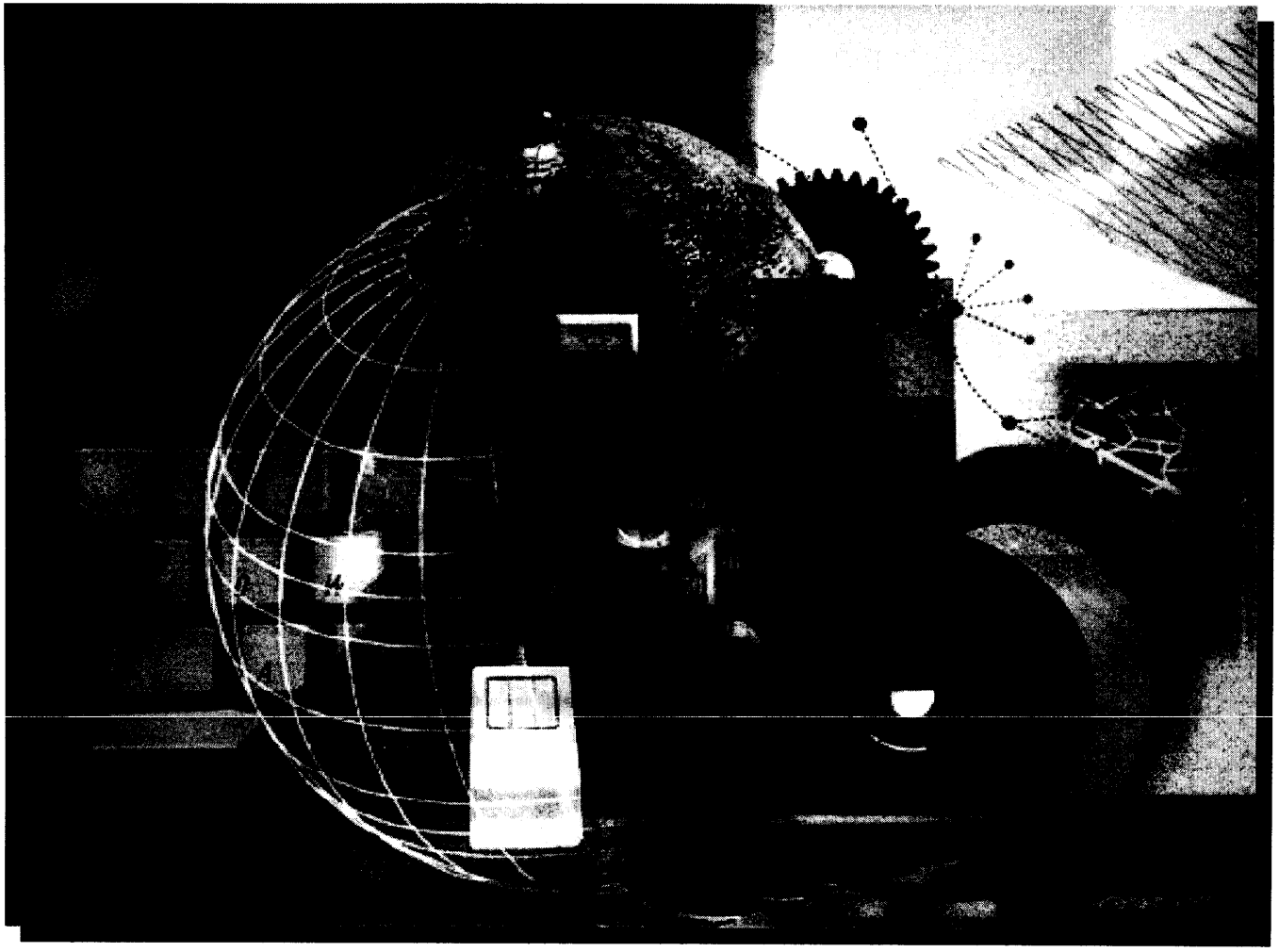
- London
  - Lloyd's licensing agreement
  - Customized data solutions for Lloyd's syndicates
- Venezuela — ISO ClaimSearch
- Israel — auto data collection

ISO's World-Class Staff

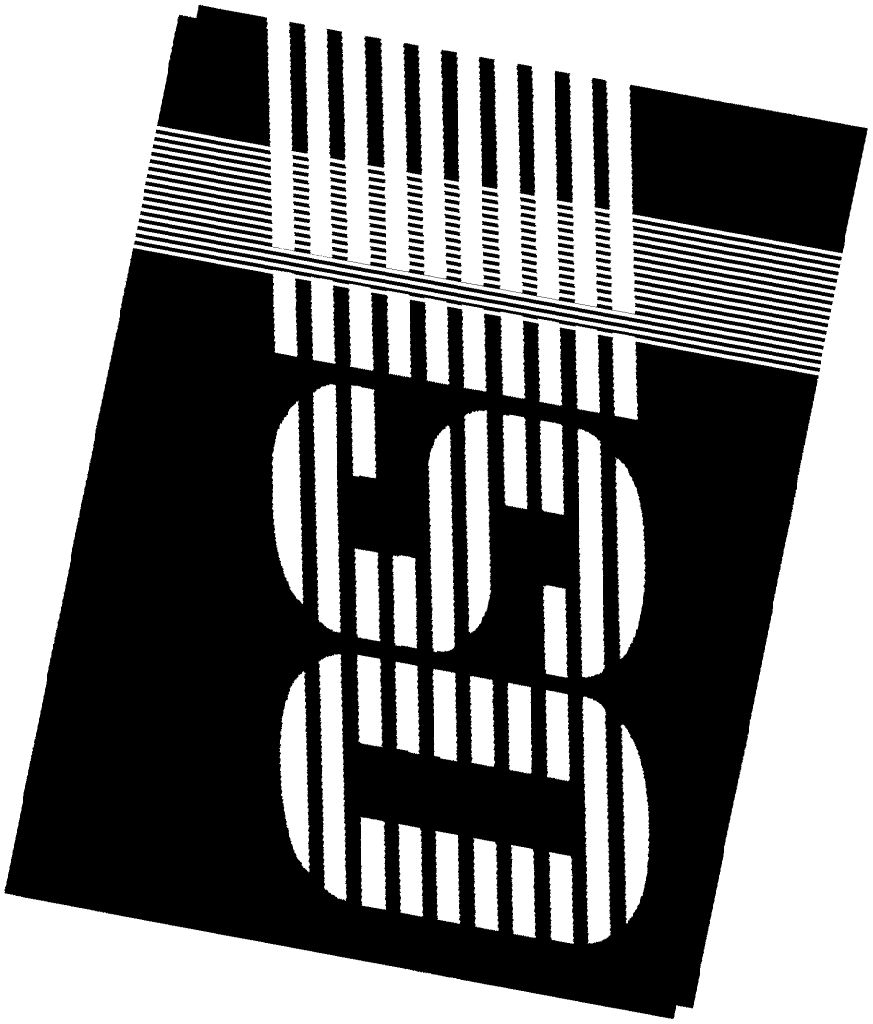
ISO's staff includes:

- **More than 200 actuarial professionals with 26 Fellows and 26 Associates**
- **120 Chartered Property Casualty Underwriters**

Serving the Diverse Needs Of the Insurance Marketplace



ISO



Working Group Objectives

WORKING GROUP OBJECTIVES February 16, 2001

- Minutes for the first two meetings presented in the form of answering several questions posed during the first meeting.
- Eight questions are:

1. What data elements need to be recorded?
2. What is to be gained by putting recorders on a school bus, given the low number of school bus passenger deaths each year?
3. What are the benefits of event data recorders?
4. What are some of the drawbacks to event data recorders?
5. What is the goal of the EDR? Is it to record what the driver does or is it for finding mechanics of a crash, change in velocity, acceleration, etc.? Is it to find culpability or causes of injuries?
6. Will EDR's be mandated?
7. What constitutes an event? Does the crash event occur when an air bag is deployed, or is it something else?
8. Can current recording devices accept analog inputs as well as digital inputs?

- These questions do not form specific objectives for the working group
- They pose a set of inputs that objectives should be tailored to.
- Possible set of objectives:

1. Data elements

a. List of data elements
b. Priorities for data elements
c. Definitions for data elements
d. Define a minimum set of data elements which all event data recorders should be capable of collecting
e. Define special data needs for trucks, motorcoaches, & school buses

2. Benefits (drawbacks) of event data recorders

a. Develop a list of benefits for event data recorders
b. Develop a list of drawbacks related to event data recorders
c. Develop a cost for various types of event data recorders

3. Technical specifications for event data recorders.

a. Amount of data to be collected prior to, during, and after the crash
b. What constitutes an event
c. Data storage format
    Analog vs. digital systems
d. Data sample rate for various data elements.
e. Event data recorder survivability
    i. Fire
    ii. Immersion

iii. Shock
iv. Crush
v. Penetration

f. Interface configurations
g. data downloading
   i. direct connection
   ii. data link (cell communication)
g. Future requirements and technological advances
h. Incorporation of fleet management tools
i. Independent power supply

4. Privacy and Legal issues

a. Will data from event data recorders to be used against (or for) vehicle operators?
b. Who owns the data?
c. NHTSA's position is the owner of the vehicle owns the data

Definitions

Definitions

February 16, 2001

Definitions from TMC

EVENT	Anything of interest that may occur during the operation of the vehicle.
INCIDENT	Any event in which the safety of the vehicle or any person is threatened.
A TRIGGER	Either any data parameter that exceeds a predefined threshold or external input. A trigger initiates the capture of data.
CAPTURE	The process of saving recorded data.

Other Sources:

- **SAE - J211 and others**
- **TRB - A2A04 crash test procedures (NCHRP report 350)**
- **NHTSA test protocals**
  - NCAP
  - Compliance
  - Research Tests
- **NTSB**
  - Other modes (air, rail, voyage)
  - Current highway data collection (trucks)

Survey Results

SURVEY RESULTS
October 25, 2000

- Survey of the data parameters
- Selected by NTSB for inclusion on motorcoach and school bus EDRs
- 14 persons responded
- Almost unanimous agreement that these data would be useful
- Priority was noted as Hi, Med, or Low
- 1=H, 2=M, 3=L
- The following table ranks from highest to lowest, with average score.

Parameter	**Priority**
Vehicle Speed	1.2
Longitudinal Acceleration	1.2
Braking Input	1.2
Lateral Acceleration	1.4
Brake System Status (Normal/Warning)	1.5
Engine Speed (RPM)	1.7
Driver's Seat Belt Status	1.7
Steering Input	1.7
Turn Signal Status (Left/Right)	1.8
Vertical Acceleration	1.8
Heading	1.8
Flashing Red Light Status (On/Off) (School Buses)	1.9
Brake Light Status (On/Off)	1.9
Gear Selection	1.9
Head/Tail Light Status (On/Off)	1.9
Hazard Light Status (On/Off)	2.0
Passenger Door Status (Open/Closed)	2.2
Emergency Door Status (Open/Closed)	2.4
Status of Additional Seat Belts	2.4
Air Bag Deployment Criteria	2.6
Air Bag Deployment Time	2.6
Air Bag Deployment Energy	2.6

Data Element List

Data Element List from EDR WG Draft Final Report	
#	Description
1	2 vs. 4 Wheel Drive
2	Active Suspension Measurements
3	Advanced Systems
4	Air Bag Deploy Time (Time from Start of Crash to Start of Air Bag Inflation)
5	Air Bag Status
6	Air Bag Lamp Status
7	Air Bag On/Off Switch Position (Suppression System Status)
8	Auto Distance Control
9	Auto Collision System
10	Automatic Collision Notification
11	Battery System Voltage
12	Belt Status - Each Passenger
13	Brake Effort - Service
14	Brake Pressure
15	Brake Status - ABS
16	Brake Stop Lamp Status
17	Clutch Status
18	Collision Avoidance, Braking, Steering, Etc.
19	Crash Pulse - Longitudinal
20	Crash Pulse - Lateral
21	Cruise Control Active
22	Child Safety Seat Presence Indicator
23	Delta-V - Longitudinal
24	Delta-V - Lateral
25	Digital Imaging
26	Door Ajar Switch On
27	Door Lock State
28	Electronic Compass Heading
29	Electric Steering Functional
30	Engine Throttle Status
31	Engine RPM
32	Environment - Ice
33	Environment - Wet
34	Environment - Inside Temperature
35	Environment - Outside Temperature
36	Environment - Lumination
37	Environment - Other
38	Exhaust Brake Status
39	Fuel Level
40	Ignition Cycle Counter
41	Lamp Status (Headlight and Tail Lamps On/Off)
42	Lateral Acceleration Just Prior to Crash Longitudinal Acceleration Just Prior to Crash

Data Element List from EDR WG Draft Final Report	
#	Description
43	Location - GPS Data
44	Number of Occupants
45	Occupant Weight Sensor - Front Passenger
46	Pre-Tensioners
47	Phone Status
48	Principal Direction of Force
49	Roll Angle
50	Roll Rate
51	Rollover (# 1/4 turns)
52	Seat Position - Driver
53	Service Engine Soon Lamp On
54	Service Vehicle Soon Lamp On
55	Stability Control
56	Steering Wheel Angle
57	Steering Wheel Tilt Position
58	Steering Wheel Rate
59	Stop Lamps Status - School Bus
60	Trailer Status
61	Throttle Position
62	Throttle-by-Wire
63	Time/Date
64	Tire Pressure Warning Lamp On
65	Traction Control
66	Traction Coefficient (Estimated from ABS Computer)
67	Transmission Selection (PRNDL Position)
68	Turn Signal Operation
69	Vehicle Mileage
70	Vehicle Speed
71	VIN
72	Wheel Speeds
73	Windshield Wiper Status
74	Yaw Rate