Netherlands Enterprise Agency

E-CROP

UNCEFACT standards

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15 February 2017,
webinar Farm Digital

>> Sustainable. Agricultural.
Innovative. International.

Content

- UN/CEFACT introduction
- Position CROP
- Concept of e-CROP
- Interaction with other standards
- Developments

What is UN/CEFACT

- UN/CEFACT =   United Nations Centre for Trade Facilitation and Electronic Business

- Objectives
  - Simple, transparent and effective processes for global business
  - Efficient and automated exchange of information

- Outputs
  - Global Trade Facilitation and Electronic Business Recommendations and Standards

- Means
  - Public Private Sector Partnership – over 300 experts from government and business
  - Meet virtually every week plus two Forums per year

UN/CEFACT Mission

- UN/CEFACT's mission is to improve the ability of business, trade and administrative organizations, from developed, developing and transitional economies, to exchange products and relevant services effectively.

- Its principal focus is on facilitating national and international transactions, through the simplification and harmonization of processes, procedures and information flows, and so contribute to the growth of global commerce
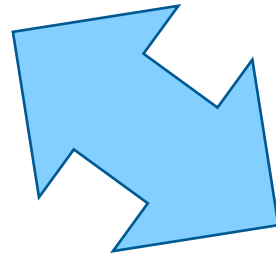
UN/CEFACT Objective and product

- Facilitate e-commerce and e-trade
- In cooperation with other bodies such as WCO, FAO, IMO , CITES, OASIS, W3C, GS1

- Recommendations
- Semantics (Core Component Library)
- Syntax (UN/EDIFACT and XML schemas)

Developments in agro food

- Sustainability
- Food safety
- Market access

- Traceability
- Transparancy

Traceability and Transperancy

- Party
  - Identification
  - Information

- Product
  - Identification
  - Description
  - Process
  - Location
  - Date/time

- Who
- What
- Why
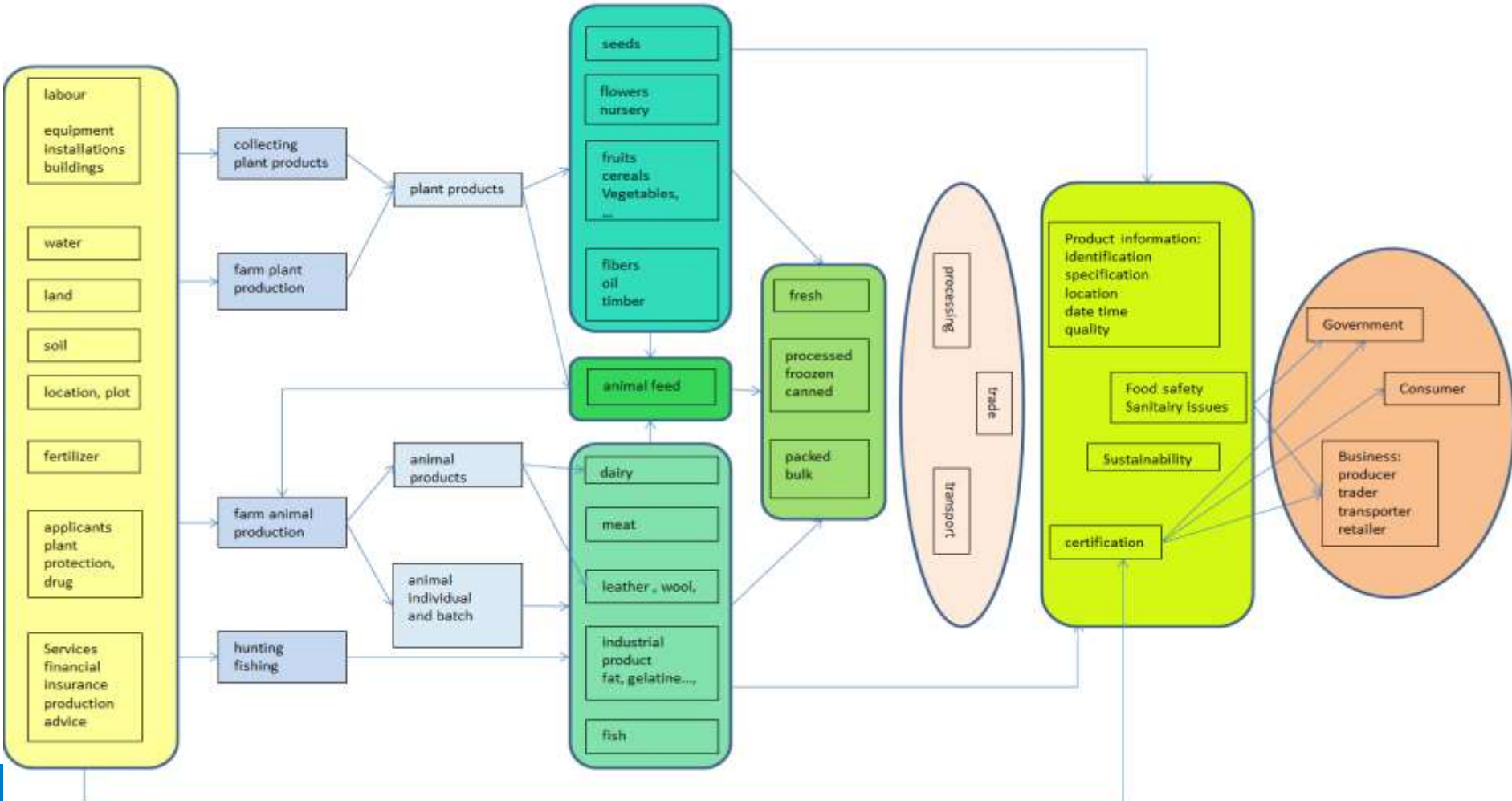- Where
- When

Developments in the agri food framework

- Standard messages :
  - e-CERT SPS fyto and vetenarian sanitairy cetrificate   G2G
  - **e-CROP**, agro product information message   B2B
  - **e-LAB** laboratory observations report   B2B, B2G, G2G
  - FLUX Fishing monitoring and reporting   G2G
  - **Track and Trace** Animals (and **Plant** and **Product**)   B2B, B2G, G2G
  - Dispatch advice (batch number, identification)   B2B

- **Coding**
  - Product (**EPC**, **Codex Alimentarius**)
  - Location and Party identification (**GLN,** …)

- **Certification**
  - Authority, NGO, Private business   (GlobalGap, Organic , Sustainable, CITES, Standard Maps ITC …)

- **Integration** of domains
  - e-Invoicing (in fish, cutflowers, fresh fruits and vegetables)
  - Transport and location (GN codes – GS1)
  - CITES e-permits
  - WCO datamodel III and IV
  - Production, Trade and Retail
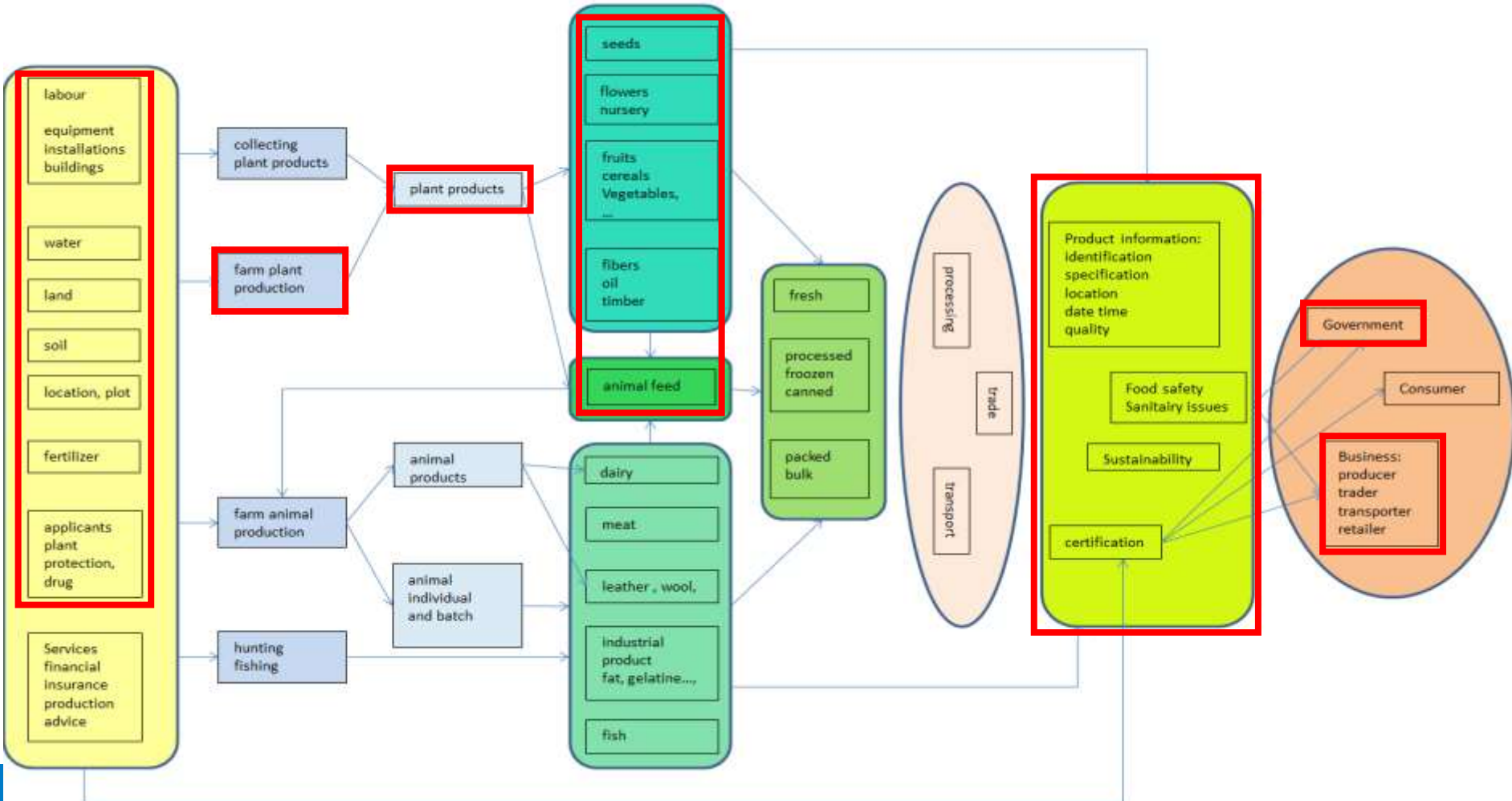
The agri food domain
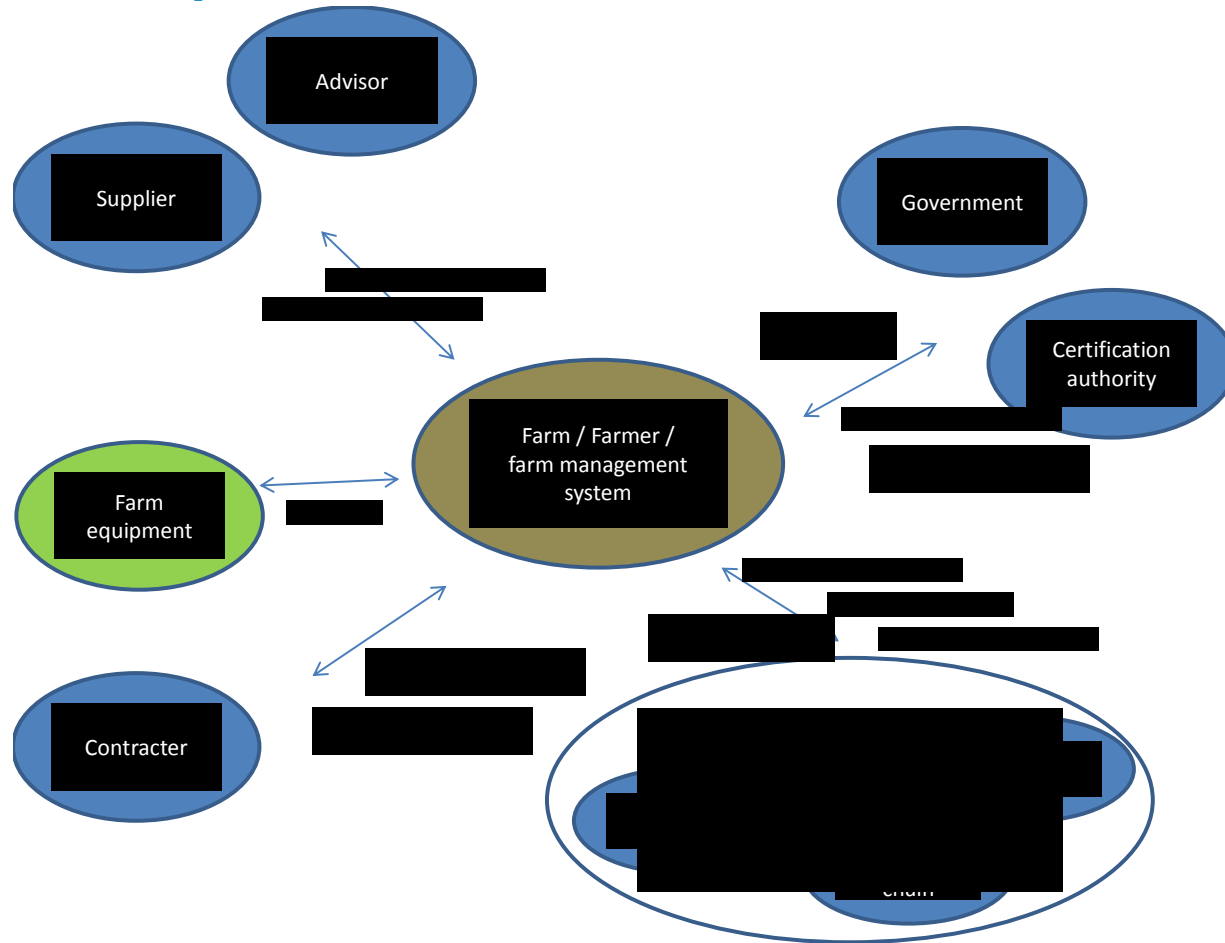
The e-CROP domain

E-CROP scope

e Crop → food supply chain

Parties:
    - grower,
    - advisor, contractor, supplier
    - trader, processor, retailer
    - consumer

Use cases:
    - advising
    - farm operations:
      planning and instruction
      operation
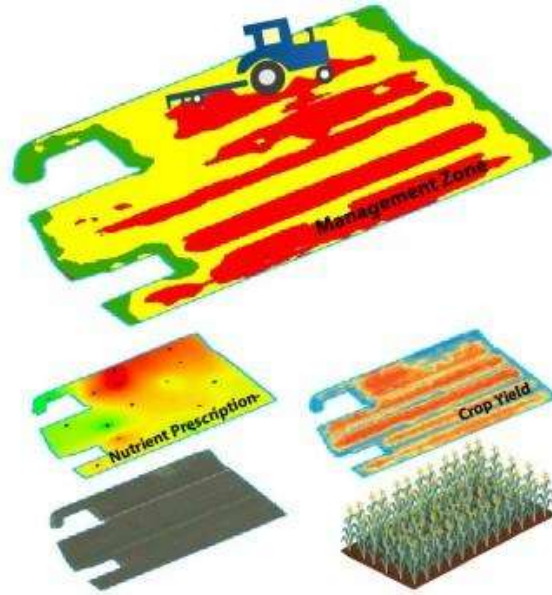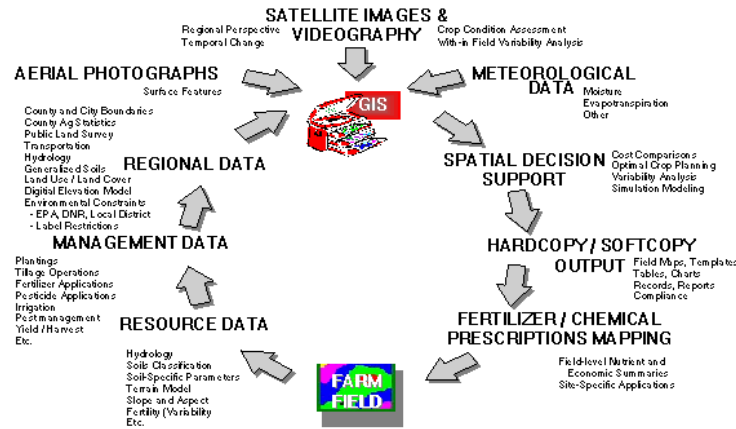   monitoring
    - product information
    - certification

e-CROP use cases support:

- Compliance
- Supply chain
- Cultivation
- Business to governement

And support in:

- Planning
- Operations
- Observations
- Report

- Regulations

SATELLITE IMAGES & VIDEOGRAPHY
Regional Perspective
Temporal Change
Crop Condition Assessment
With-in Field Variability Analysis

AERIAL PHOTOGRAPHS
Surface Features

METEOROLOGICAL DATA
Moisture
Evapotranspiration
Other

County and City Boundaries
County Ag Statistics
Public Land Survey
Transportation
Hydrology
Generalized Soils
Land Use / Land Cover
Digital Elevation Model
Environmental Constraints
- EPA, DNR, Local District
- Label Restrictions

REGIONAL DATA

GIS

SPATIAL DECISION SUPPORT
Cost Comparisons
Optimal Crop Planning
Variability Analysis
Simulation Modeling

MANAGEMENT DATA

Plantings
Tillage Operations
Fertilizer Applications
Pesticide Applications
Irrigation
Pest management
Yield / Harvest
Etc.

HARDCOPY / SOFTCOPY OUTPUT
Field Maps, Templates
Tables, Charts
Records, Reports
Compliance

RESOURCE DATA

Hydrology
Soils Classification
Soil-Specific Parameters
Terrain Model
Slope and Aspect
Fertility (Variability
Etc.

FARM FIELD

FERTILIZER / CHEMICAL PRESCRIPTIONS MAPPING
Field-level Nutrient and
Economic Summaries
Site-Specific Applications

Management Zone

Nutrient Prescription

Crop Yield

Example for a field   B2B and B2G
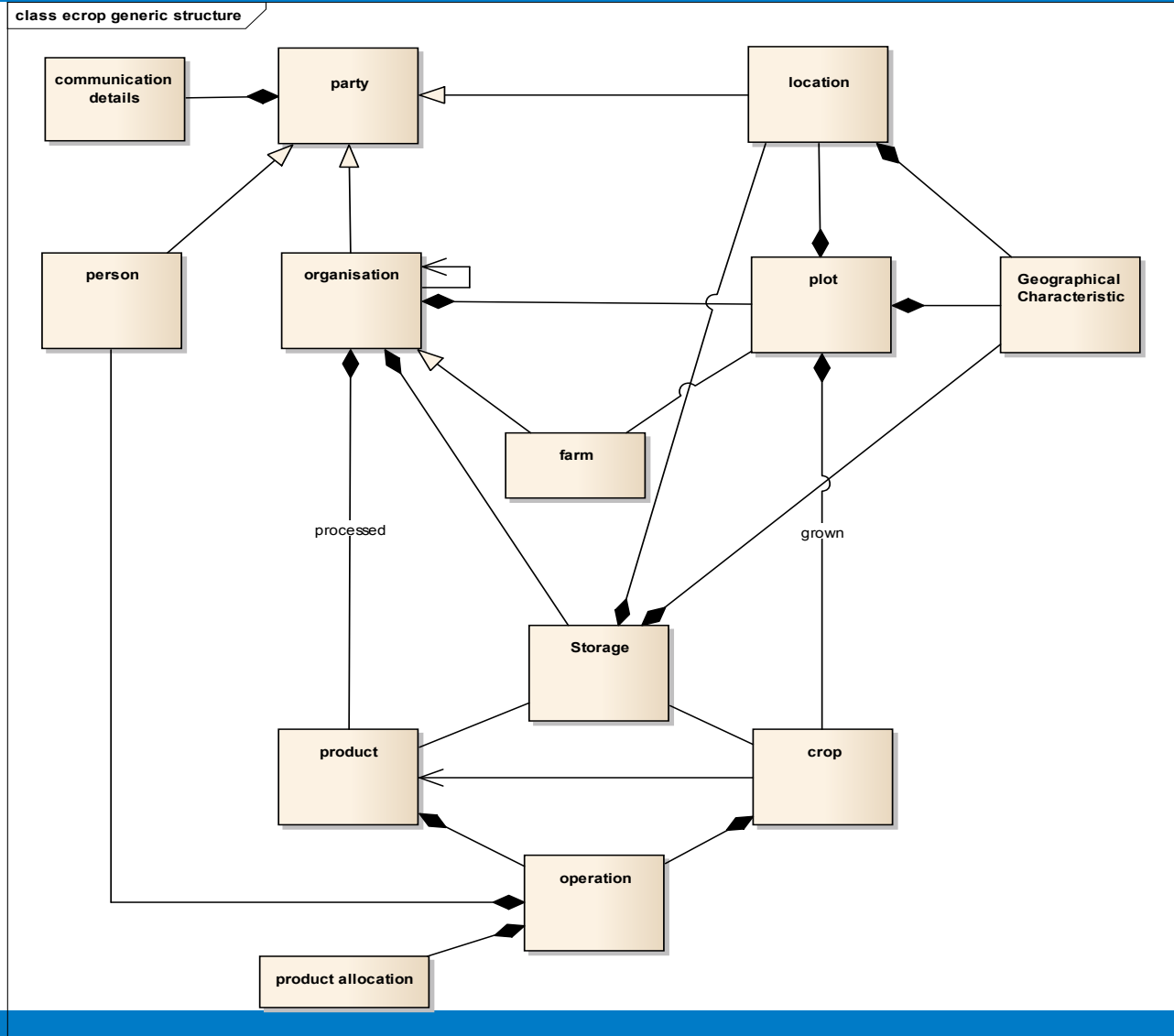
Identification

Accuracy

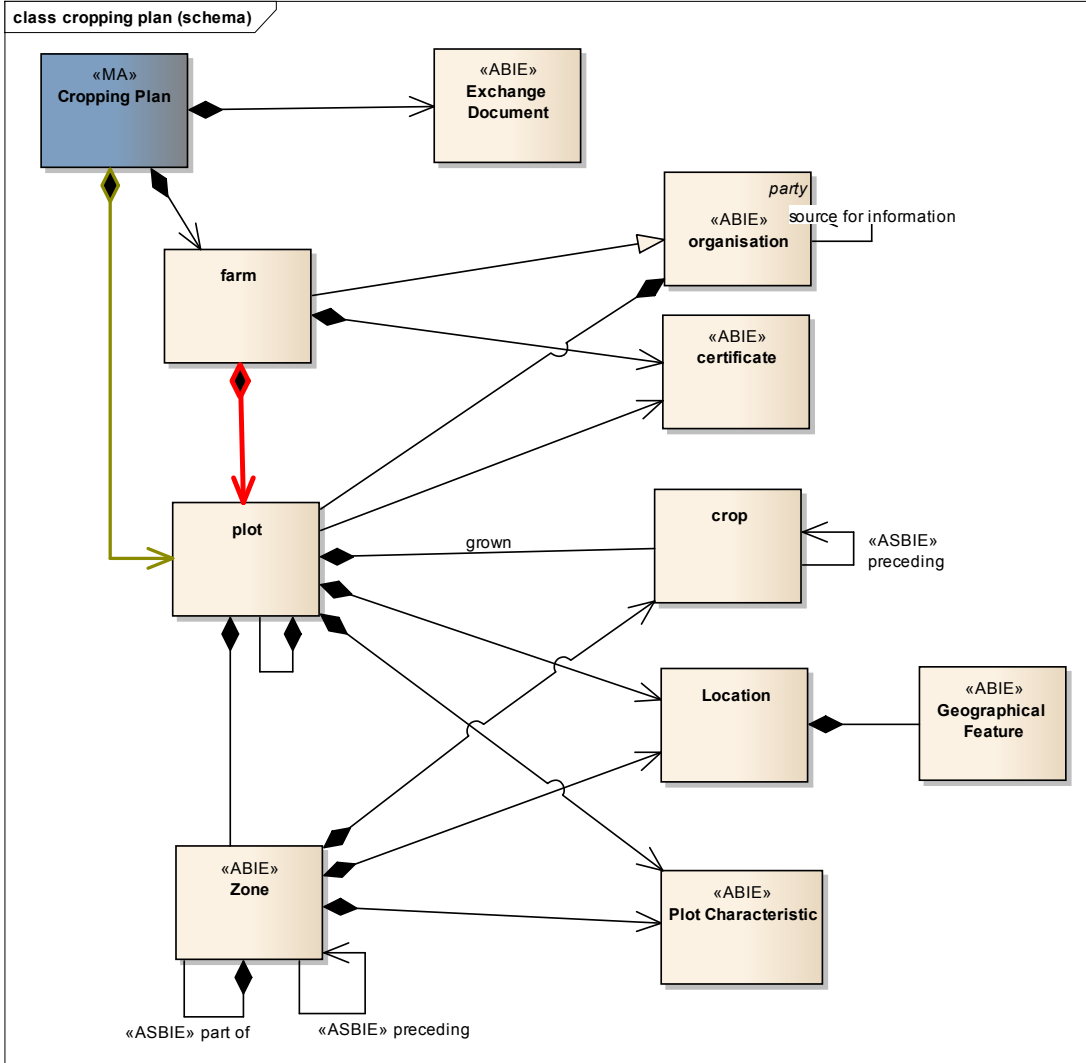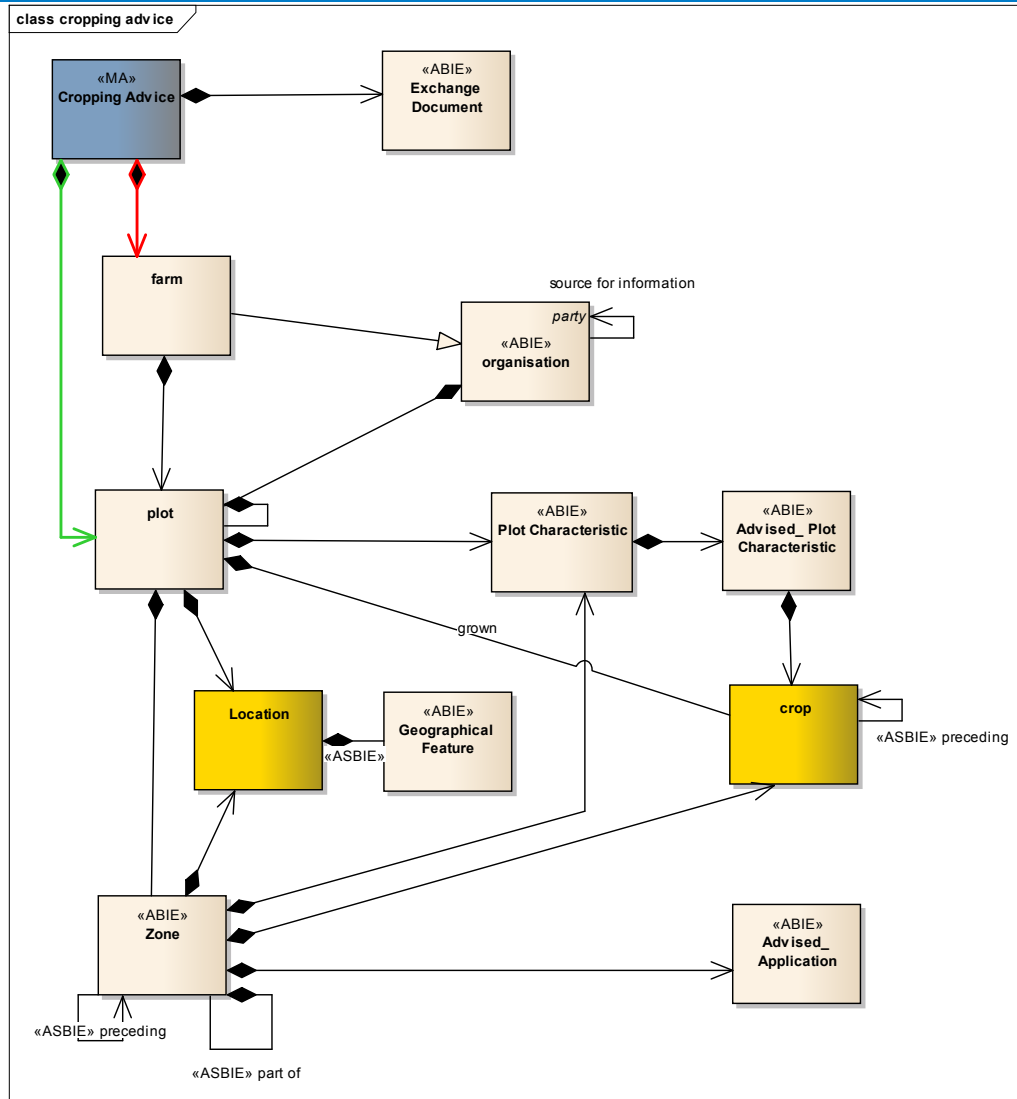# Generic structure e-CROP

Based on

- Data Reference Model CROP
- UN/CEFACT Core Component Library
- Re-use elements of
  - eLAB,
  - Track and Trace,
  - eCERT

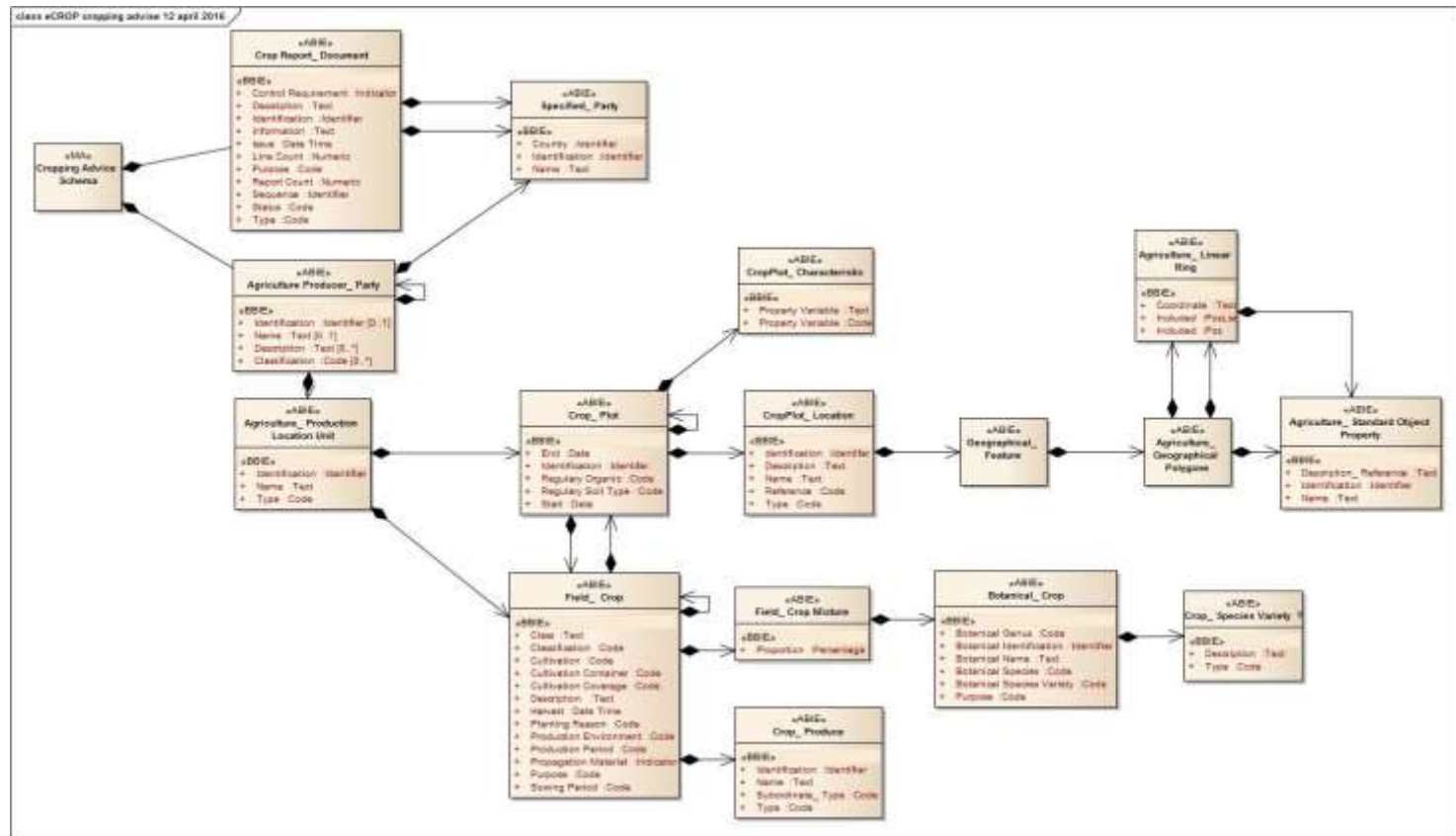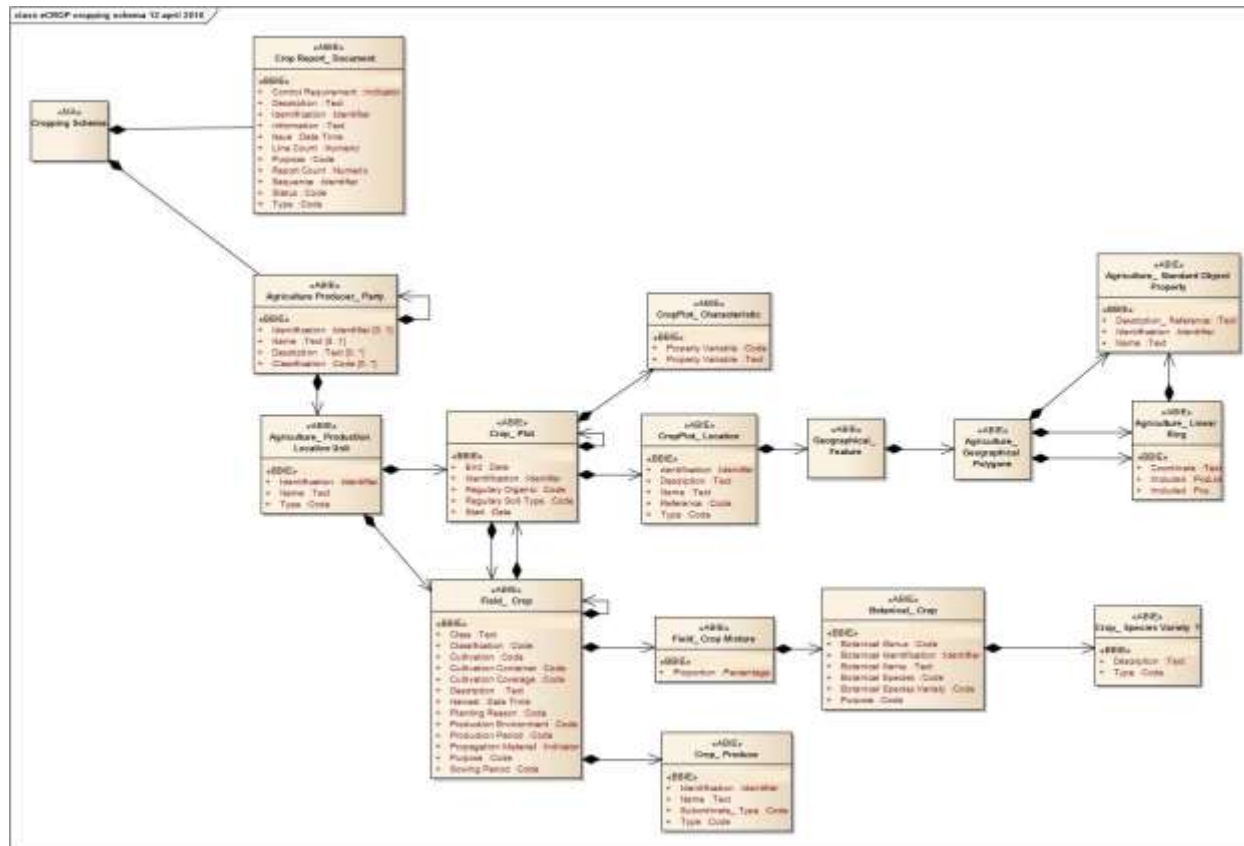# Generic Structure e-CROP

Crop Report

Crop Advise

Cropping schema

Geographical information

- Support for advanced features
  (multi point, line, arc, multi polygon, surface, 3D, grids)

- Support for field production and greenhouse cultivation

- Harmonised to OGC specifications

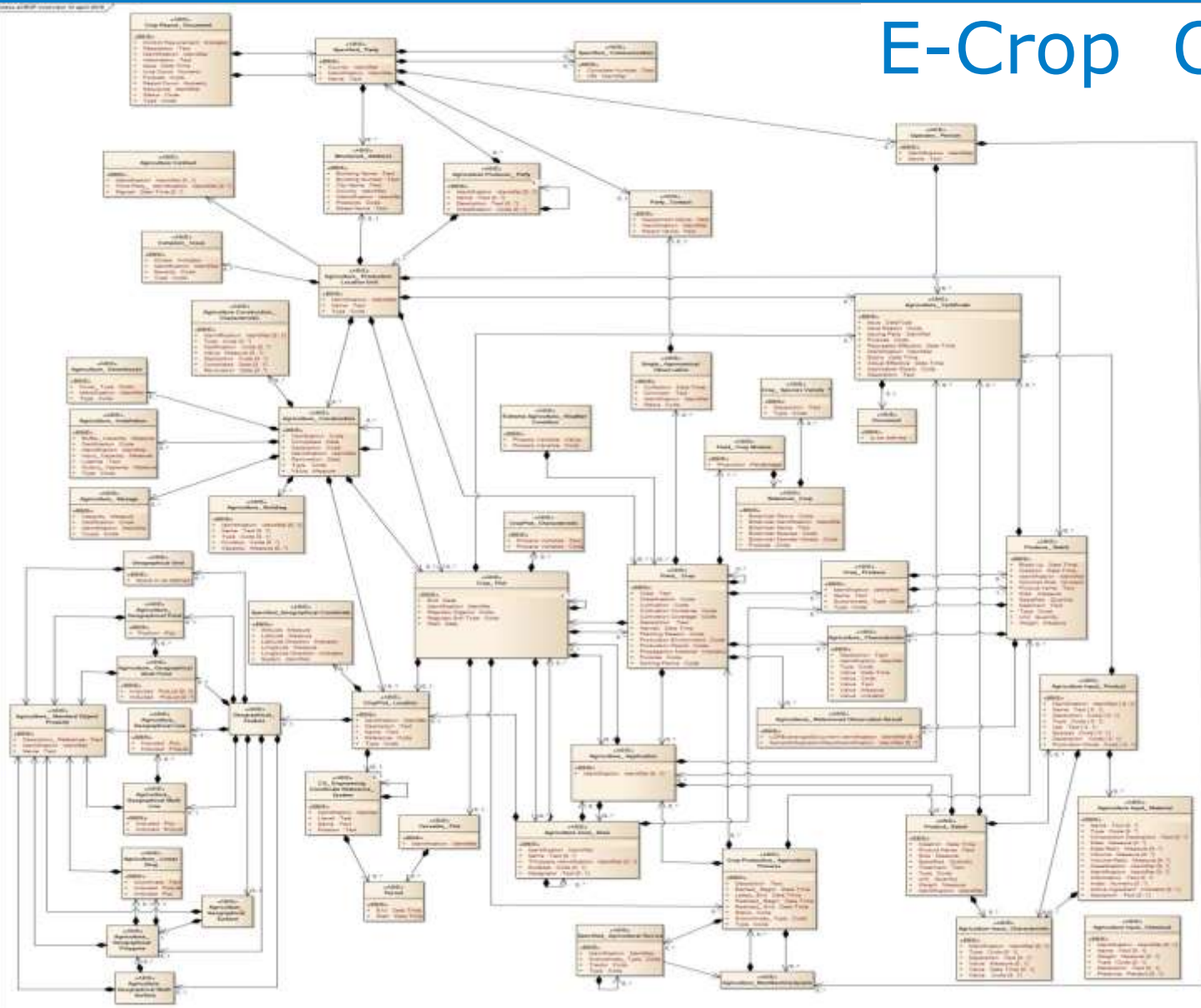- Interoperable with
  - GIS applications
  - ISObus

class eCROP overview 12 april 2016 geo element

E-Crop Overview

386 Objects:

47 ABIE
215 BBIE
123 ASBIE

Message sequence

composite structure Sequence model eCROP

| Farmer | Buyer | Advisory service | Audit organization | Standard setting organization | Governmental organization |

Use case Compliance

norm for compliance report()

instruction compliance report()

compliance report()

certificate()

certificate()

Use case Supply chain

instruction crop registration report()

crop registration report()

Use case Cultivation support

cropping plan()

cropping advice()

crop registration()

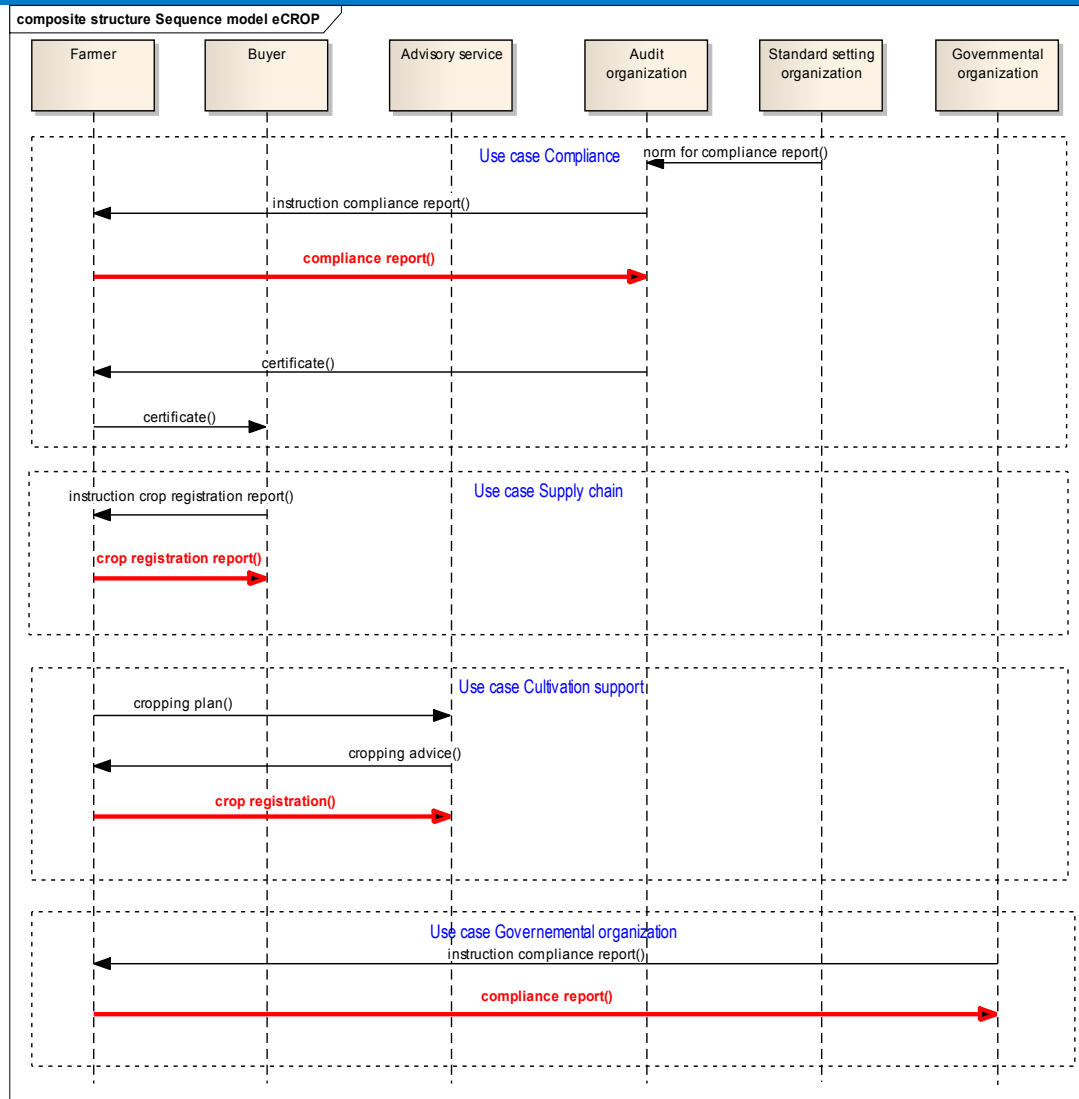## Use case Governemental organization

instruction compliance report()

compliance report()

e-CROP (fresh) message

- Crop specifications
  - Start date, harvest date, variety, production location
- Data about treatments
  - Fertilizers
  - Pesticides
  - Use of energy and water
- Data about labor
- Certificates (Global GAP, MPS, SPS E-Cert)

e-CROP (arable) farming message

- Advice support
- Cropping scheme
- Farm operations
- Crop report

Developments

- code lists
- identifiers (party, location, product)
- geographical information (points, polygons, grids)

Code lists

- product coding (GPC)
- plant variety
- plant protection chemicals
- applicants
- packaging
- …

Identifiers

- Party: farmer, farm, trader, cooperative
           GLN, other

- Location: farmsite, storage, field,
           crop field, treatment zone,
           harvest zone
           GLN, other

- Product: individual, batch, lot,
           stored and or packed product
           aggregation / deaggregation of batches
           GTIN, SGTIN, other

eCROP planning

- Project initiation   2015
- Draft BRS   April 2016
- BRS approved   Sept 2016
  (BRS needs to be updated)
- Harmonisation UNCEFACT CCL   Mar 2017
- Publication in CCL 17A
  XML schemas   June 2017

Documentation

- Business Requirement Specification
- Requirement Specification Mapping

- XML schema
  - eCROP
  - Cropping advise
  - Cropping schema
  - Crop recording
  - Crop reporting
  - …
- Implementation guideline

- Implementation

Track and Trace Plant and Plant product

- Event driven

  Event: modification of location, product, proces
  transport or party

- Recording of events

- Retrieving information about events.

- Based on

  - Who, What, Why, Where, When
  - generic level ISO / IEC 19987 (EPCIS)
  - detailed level for plant and product details

E-LAB: 3 messages

- Request for laboratory observations
- Report laboratoy observations
- Acknowledge emssage

Practised for
- Residues on fruit and vegetables
- Mineral (fertiliser) management
- Soil sample observation results
- Dairy farming
- Animal health, animal products

Status UNCEFACT messages schemes

- in production
  - SPS e-CERT
  - e-DAPLOS
  - e-LAB
  - TT events and TT animals

- Under development
  - e-CROP (2017)
  - TT plant, plant product, animal product (2017)

http://www.unece.org/cefact/brs/brs_index.html

http://www.unece.org/cefact/xml_schemas/index

http://www.agroconnect.nl/Default.aspx?tabid=1765

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