

CDCB

Genomic Nominators Workshop

Linthicum Heights, MD

May 10, 2018



CDCB Genomic Nominators Workshop - May 10, 2018

Program

Time	Activity
8:30	Introductions
8:45	CDCB Update
9:00	CDCB Health Evaluations
9:30	Data Quality Certification Overview
9:50	2017 Genomic Nominators Review report
10:30	Milk Break
10:50	2017 Genomic Nominators Review report
11:15	Guidelines update
11:45	2018 Genomic Nominators Review
12:00	Lunch
1:30	CDCB new developments
3:00	Milk Break
3:20	Wrap up discussion
4:30	Adjourn
4:45	Happy Hour

Introductions

NAAB

- ABS Global
- *Alta Genetics*
- Genex
- NAAB
- *New Generation Genetics*
- Select Sires

PDCA

- *Ayrshire (ABA)*
- Brown Swiss (BSCBA)
- Holstein (HAUSA)
- *Guernsey (AGA)*
- Jersey (AJCA)

Genomic laboratories

- *BioGenesys*
- EuroFins
- Genetic Visions
- Neogen
- VHL
- *Weatherbys Scientific*
- Zoetis

DRPs

- NDHIA

Canada

- *Holstein Canada*
- Semex

2018 Genomic Nominators Workshop

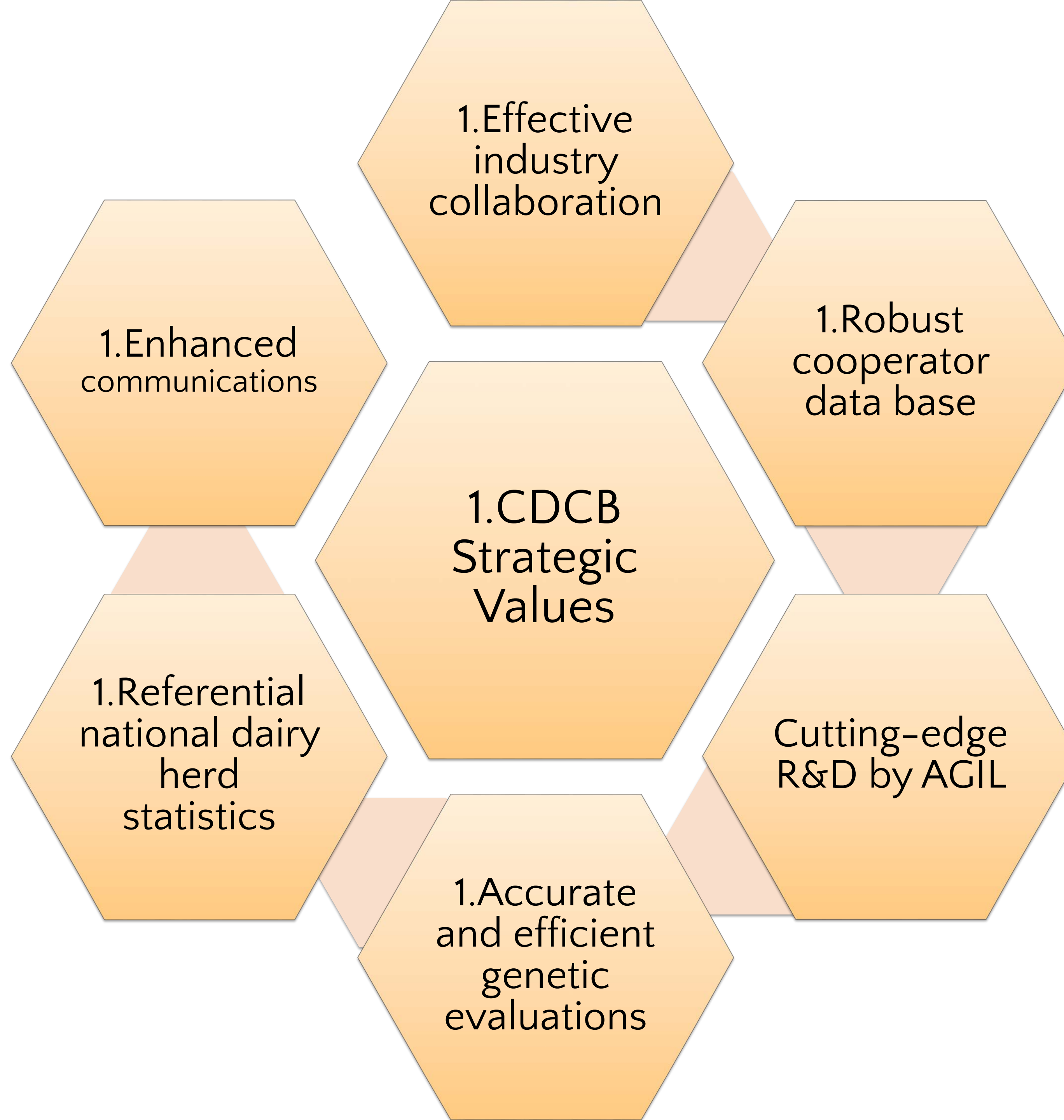
CDCB UPDATE

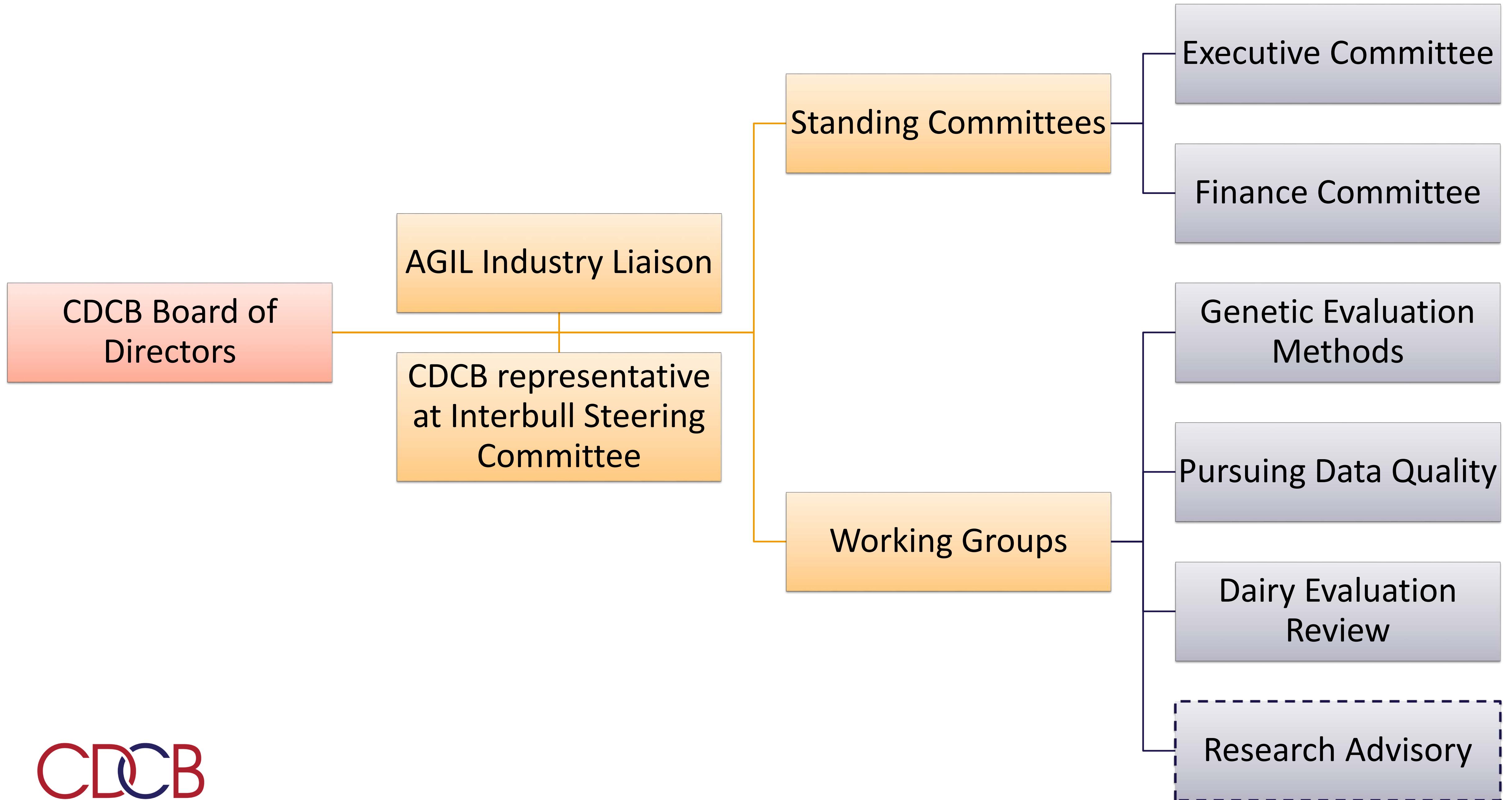


The Council on Dairy Cattle Breeding (CDCB) is an industry collaboration that benefits the dairy community by promoting dairy cattle improvement and establishing the gold standard of dairy genetics.

Council on Dairy Cattle Breeding

- Represents the data providers interests
- Partnership between government and private sector
- Service oriented, data driven operation
- Cooperator database + Genetic evaluations + Farm management benchmarking
- The National Cooperator Database is the most important asset





AgSource Cooperative Services
Arizona DHIA
Dairy Lab Services
Dairy One Cooperative Inc.
DHI Cooperative Inc.
DHIA West
Gallenberger Dairy Records
Heart of America DHIA
Idaho DHIA
Indiana State Dairy Association
Integrated Dairy Herd Improvement
Jim Sousa Testing
Lancaster DHIA
Mid-South Dairy Records
Minnesota DHIA
Northstar Cooperative DHI Services
Puerto Rico DHIA
Rocky Mountain DHIA
San Joaquin DHIA
Southern DHIA Affiliates
Tennessee DHIA
Texas DHIA
Tulare DHIA
United Federation of DHIA's
Washington State DHIA

Dairy Records Providers (25)

ABS Global. Inc.
Alta Genetics USA
American Jersey Cattle Association
Bio-Genesys Ltd.
Genetic Visions-ST LLC
Genex Cooperative. Inc.
Holstein Association USA. Inc.
Holstein Canada
National Association of Animal Breeders, Inc.
Neogen Corporation dba GeneSeek
New Generation Genetics. Inc.
Select Sires Inc.
Semex Alliance
VHL Genetics
Zoetis Genetics

Genomic Nominators (15)

American Guernsey Association
American Jersey Cattle Association
American Milking Shorthorn Society
Brown Swiss Cattle Breeders' Association
Holstein Association USA. Inc.
Red and White Dairy Cattle Association
U.S. Arshire Breeders' Association

Purebred Dairy Cattle Association (7)

Agriculture and Horticulture Development Board
ANAFI
CDN
Interbull Centre (34)
Intergenomics (8)
Qualitas
Vit

International Partners (7+)

AgriTech Analytics
AgSource Cooperative Services
Amelicor
Dairy Records Management Systems

Dairy Records Processing Centers (4)

Bio-Genesys Ltd.
EuroFins Bio Diagnostics Inc.
Genetic Visions-ST LLC
Neogen Corporation dba GeneSeek
VHL Genetics
Weatherbys Scientific
Zoetis Genetics

Genomic Laboratories (7)

Priorities that are already in pipeline

- Create Research Advisory Group
- Enhance health evaluations
- Investigate instability on fertility evaluations
- Launch a SNP chip validation service
- Genomic laboratories QC review
- Create a data pipeline for collaborator studs

Long term priorities

- Support ARS-AGIL revitalization
- Improve data ingestion procedures
- Develop new web query system
- Rewrite data ingestion software
- Update evaluation results verification package

Competing priorities

- Include crossbred animals in genomic evaluations
- Develop residual feed intake evaluations
- Update Predictive SNPs (77K)
- Revisit calving traits evaluations
- Develop new tools for QCS audits
- Include additional type genomic evaluations for colored breeds

Proposed changes in the CDCB service fees values

Rate code	Kind of Participation	Females		Males (15 mo or younger)				Males (older than 15 mo)	
		Current	New	Current Initial Fee	New Initial Fee	Current AI Fee	New AI Fee	Current Initial Fee	New Initial Fee
1	Total Program	0	0	15	20	575	800	15	20
2	Member	1	1	22	30	575	800	22	30
3	Non-member	3	5	150	200	575	800	150	200
4	Canada	6	8	150	200	575	800	575	800
5	Approved Partners	7	10	15	20	575	800	575	800
6	All others	7	10	150	200	1,200	1,600	1,200	1,600

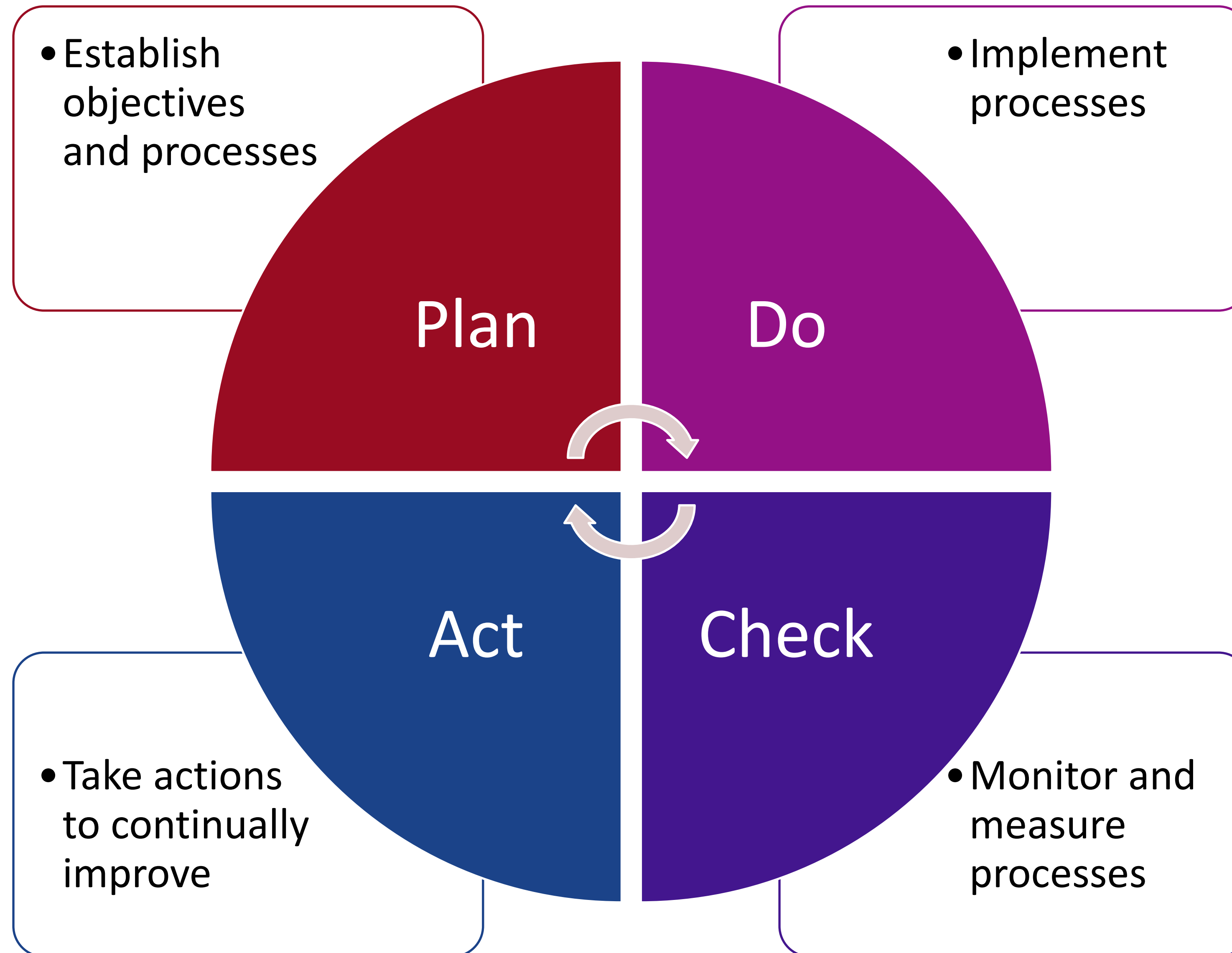
Effective collaboration is built over trust and shared visions,
and success requires willingness to face challenges and
competence to innovate.



2018 Genomic Nominators Workshop

DATA QUALITY CERTIFICATION OVERVIEW

Continuous Improvement



Data Processes

Flow

- Control
- Availability
- Cost
- Development

Quality

- Accuracy
- Standardization
- Validation
- Synchronization

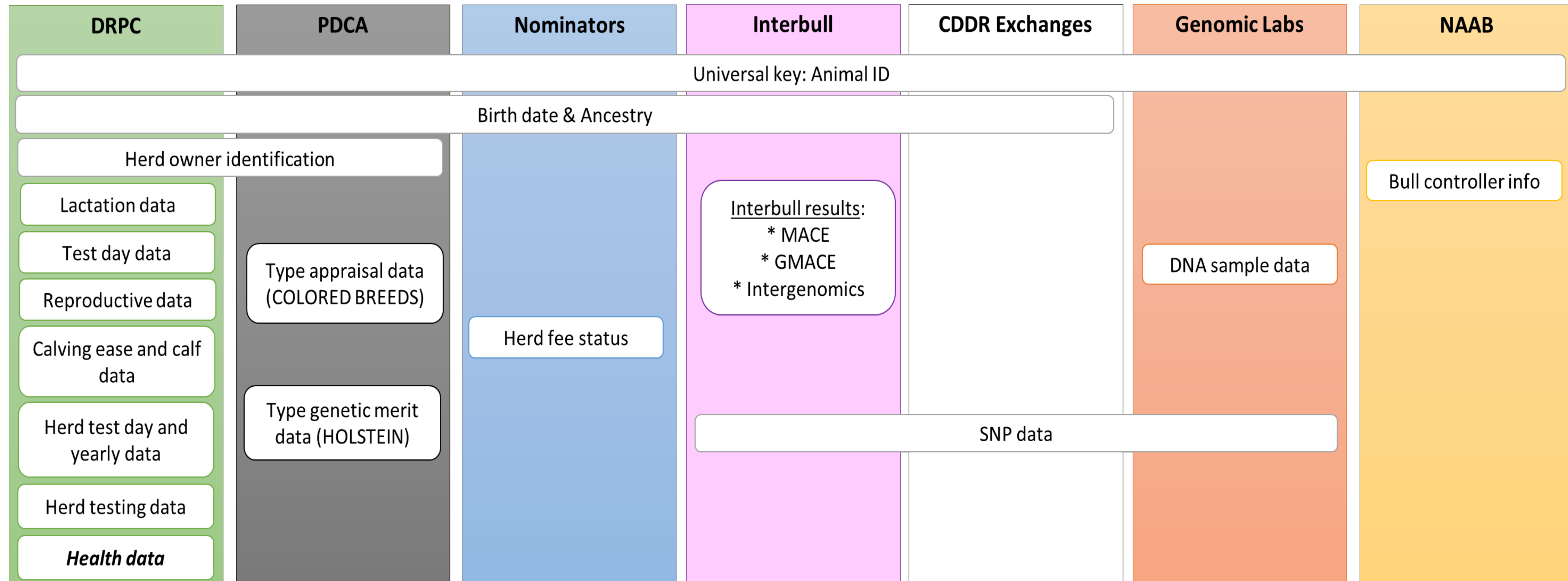
Protection

- Security
- Integrity
- Recovery

Management

- Business rules
- DB Architecture
- DB Admin

Types of incoming data supplied by class of CDCB collaborator





Quality Certification Services Inc.

The dairy records industry, in cooperation with the Council on Dairy Cattle Breeding (CDCB), have adopted a list of auditing guidelines and procedures to ensure that all providers are operating within compliance and to ensure both the accuracy and reliability of the data generated by the the dairy records industry.



Quality Certification Services Inc.



Field Service Providers



Laboratories



Meter Centers

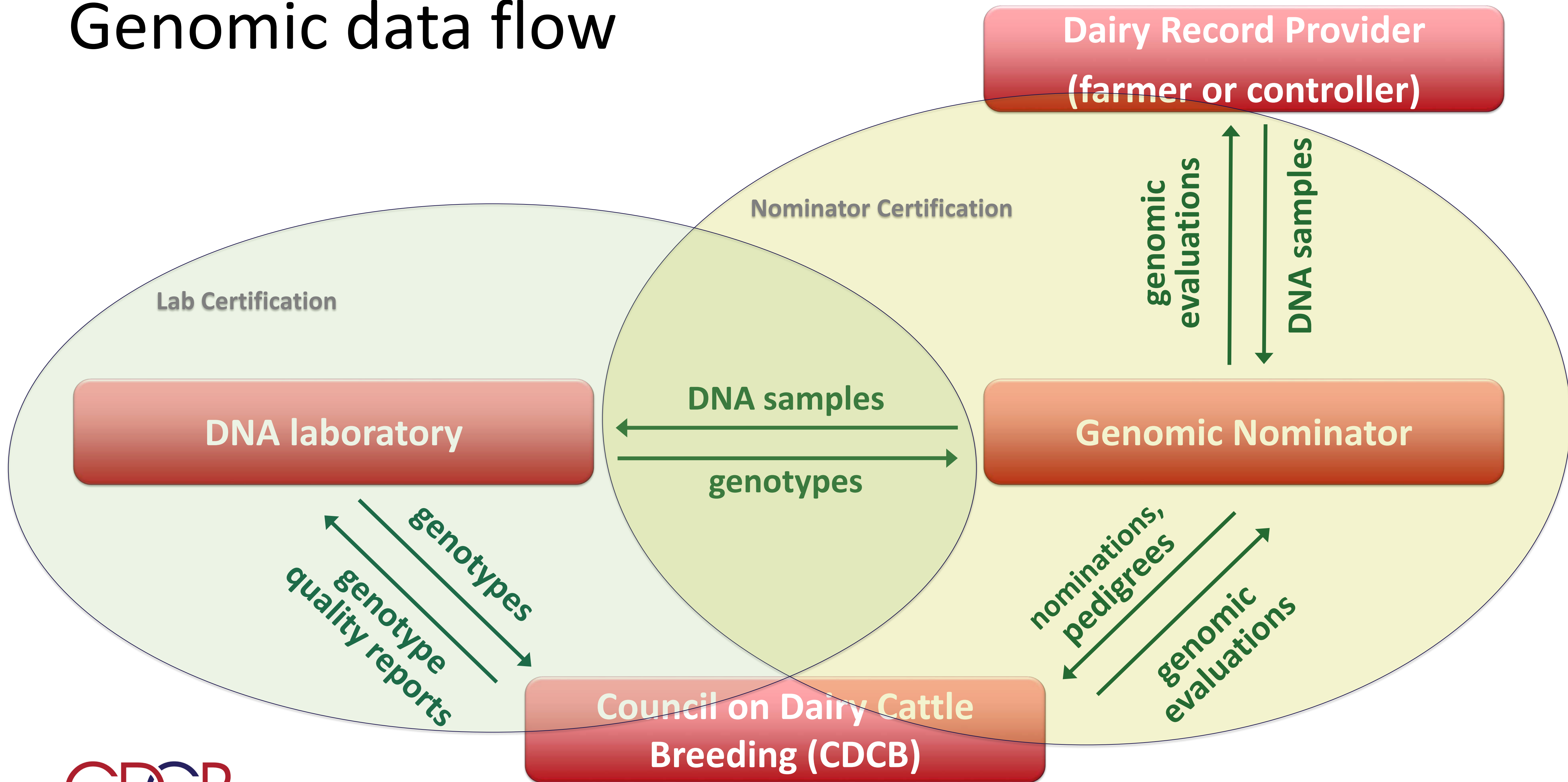


Meter Technicians



Dairy Records Processing Centers

Genomic data flow



Genomic Nominator Profile

Synergy

- Dairy background
- No conflicting interests
- ICAR-Interbull

Compliance

- Data standards
- Business rules
- Quality

Cost-effectiveness

- Scale
- Service standards

Reliability

- Timely payments
- Delivery
- Responsiveness

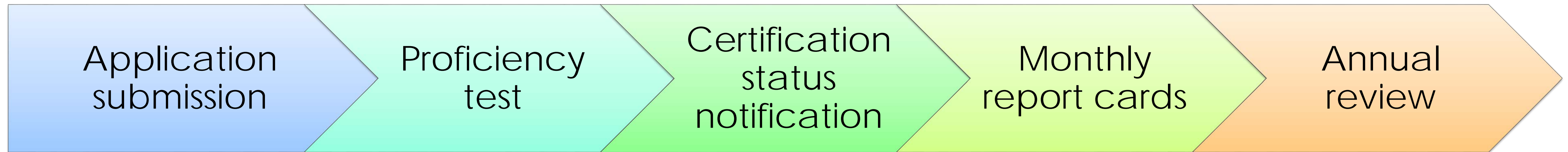
Proficiency

- Data management skills
- Communication
- Timeliness

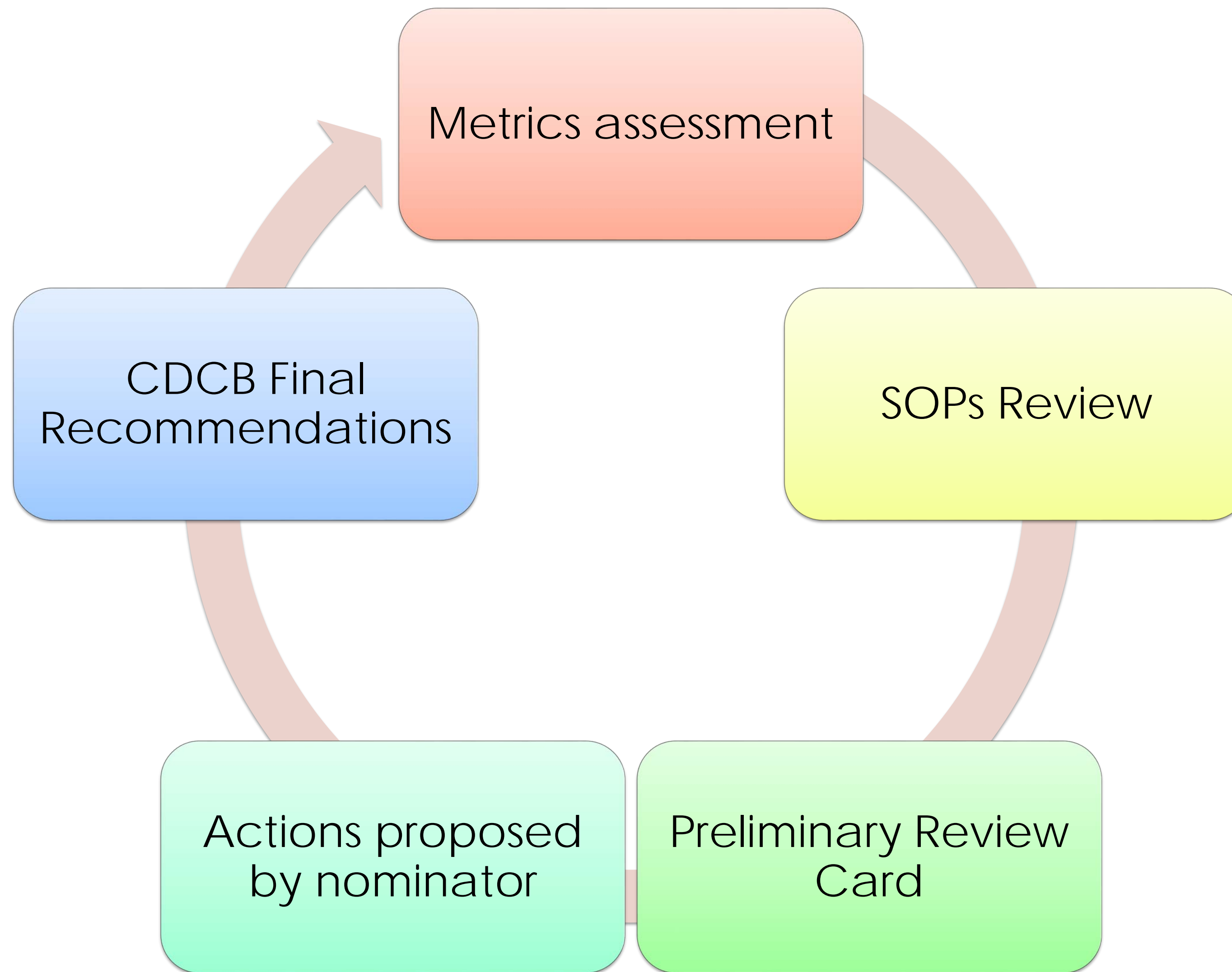
Genomic Nominators Main Tasks & Responsibilities

1. Upload information for nominated animals into the CDCB system
2. Resolve errors such as sampling and pedigree errors
3. Work with genomic laboratory and farms to resolve problems that prevent animals from getting evaluations
4. Distribute evaluation results to the requesters

Certification Process



Annual Review Plan



Genomic Nominator Standard Operating Procedures

SOP for collection of animal identification, pedigree information and herd fee status

SOP for sample collection, identification and submission to genomic laboratory

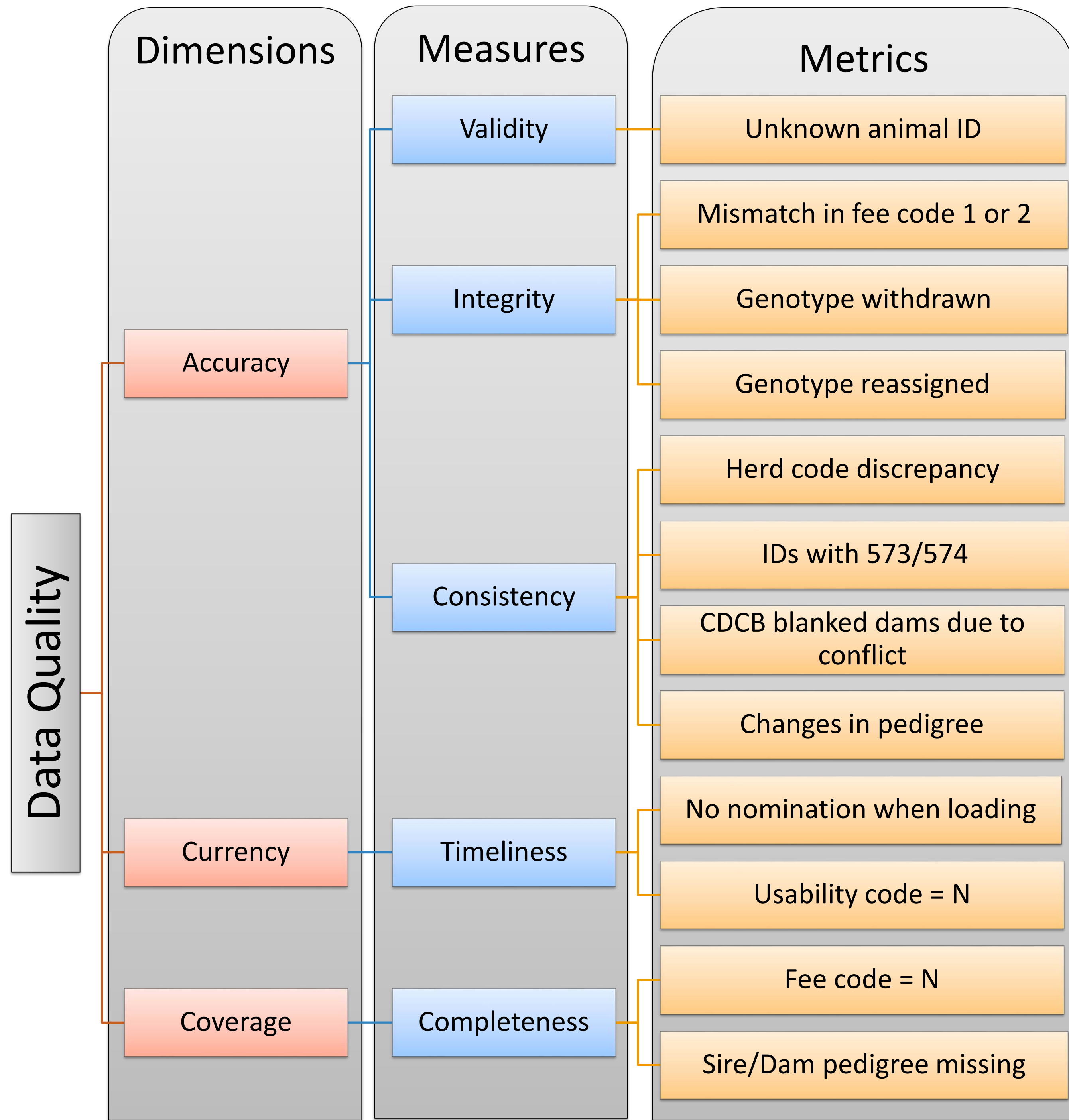
SOP for uploading nominations to the CDCB database

SOP for data conflicts management

SOP for delivery of CDCB results to requesters

Monitoring nominators' performance metrics

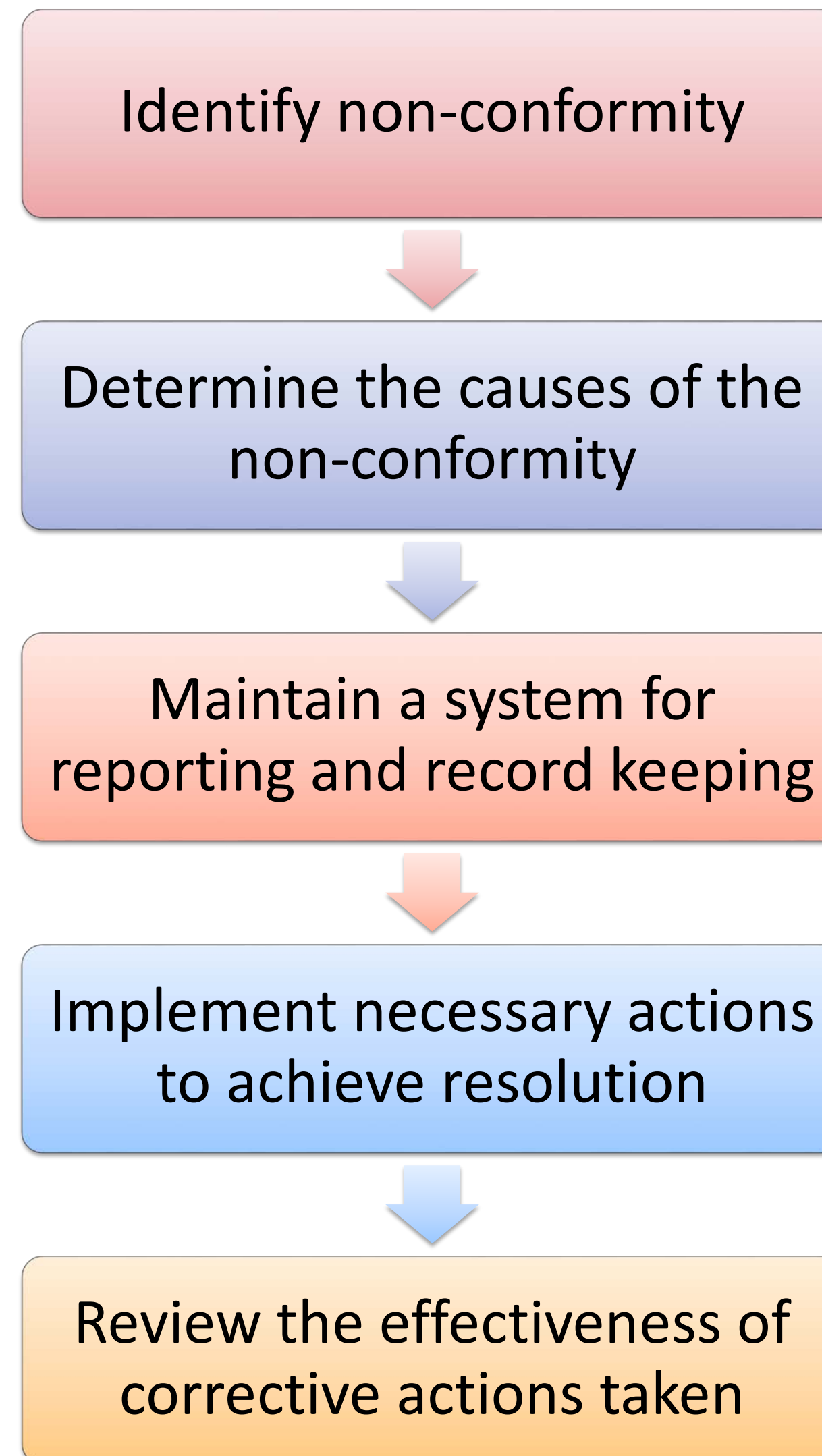
	Threshold	January 2017	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017	August 2017	September 2017	October 2017	November 2017	December 2017	January 2018	February 2018
No nomination when loading	1%	0.0%	1.93%	0.35%	0.32%	4.71%	1.72%	0.0%	0.3%	1.34%	0.62%	3.02%	0.34%	2.16%	
Unknown animal ID	1%	0.0%	0.97%	0.0%	0.32%	0.45%	0.38%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.24%	
IDs with 573/574	1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Herd code discrepancy	1%	0.0%	0.77%	0.35%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.21%	0.0%	0.0%	0.0%	
Mismatch in fee code 1 or 2	2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
CDCB blanked dams due to conflict	2%	0.0%	0.58%	0.0%	0.0%	0.0%	0.38%	0.0%	0.0%	0.22%	0.0%	0.0%	0.0%	0.0%	
Usability code = N	5%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	4.18%	2.42%	1.34%	0.82%	1.65%	0.68%	0.48%	
Fee code = N	1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.38%	0.0%	0.3%	0.0%	1.03%	0.0%	0.0%	0.0%	
Genotype withdrawn	1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.76%	1.49%	3.32%	0.45%	1.44%	1.37%	1.03%	0.48%	
Genotype reassigned	1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.19%	0.0%	1.51%	0.45%	0.21%	1.37%	0.34%	0.0%	
Changes in pedigree	25%	0.0%	0.0%	0.0%	0.0%	0.0%	4.01%	2.99%	9.06%	7.37%	4.94%	6.87%	6.85%	2.88%	
Sire pedigree missing	1%	0.0%	0.0%	0.35%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Dam pedigree missing	10%	0.45%	0.0%	0.0%	0.0%	2.02%	0.0%	0.3%	4.23%	0.89%	0.62%	0.0%	0.0%	0.24%	



Handling Nonconformities

- Nonconformity is the failure to comply with a requirement, standard, or procedure.
- Failure to correct a nonconformity or the continued presence of one, results in additional costs associated to re-work, data accuracy, loss of customers, and even the loss of quality certification.

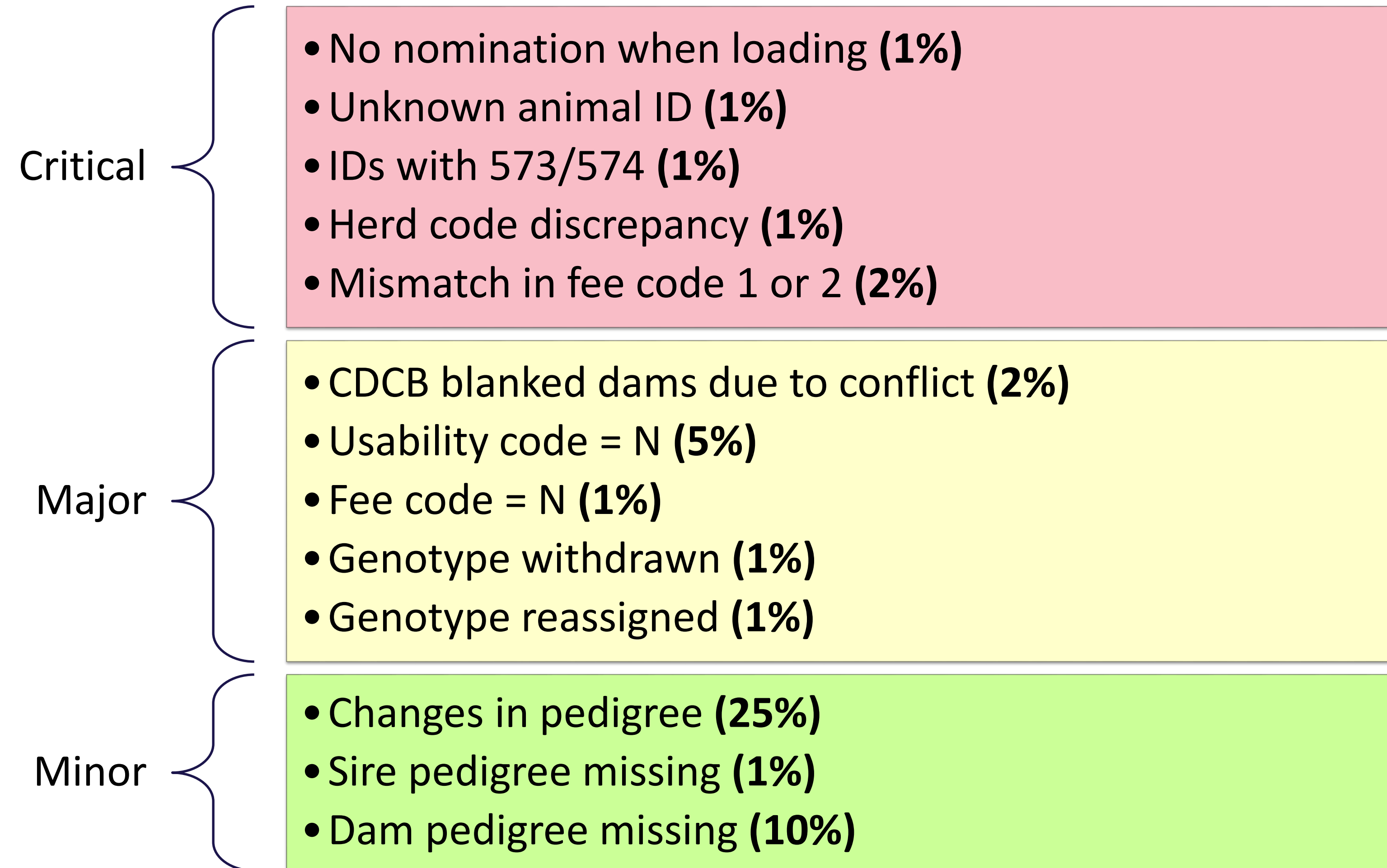
Process for identifying, documenting and analyzing nonconformities and mitigating their impacts by implementing corrective and preventive actions

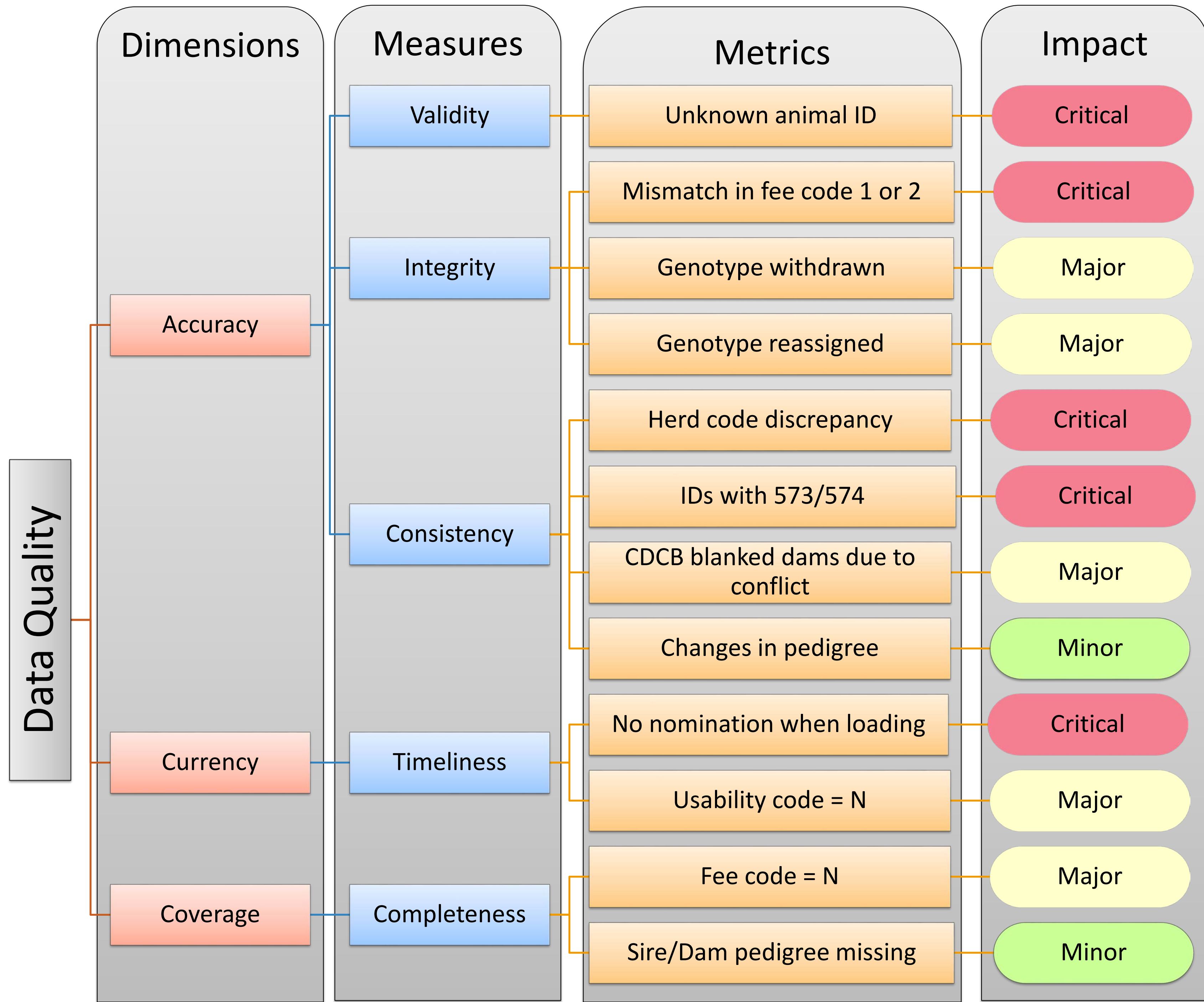


Types of Nonconformities

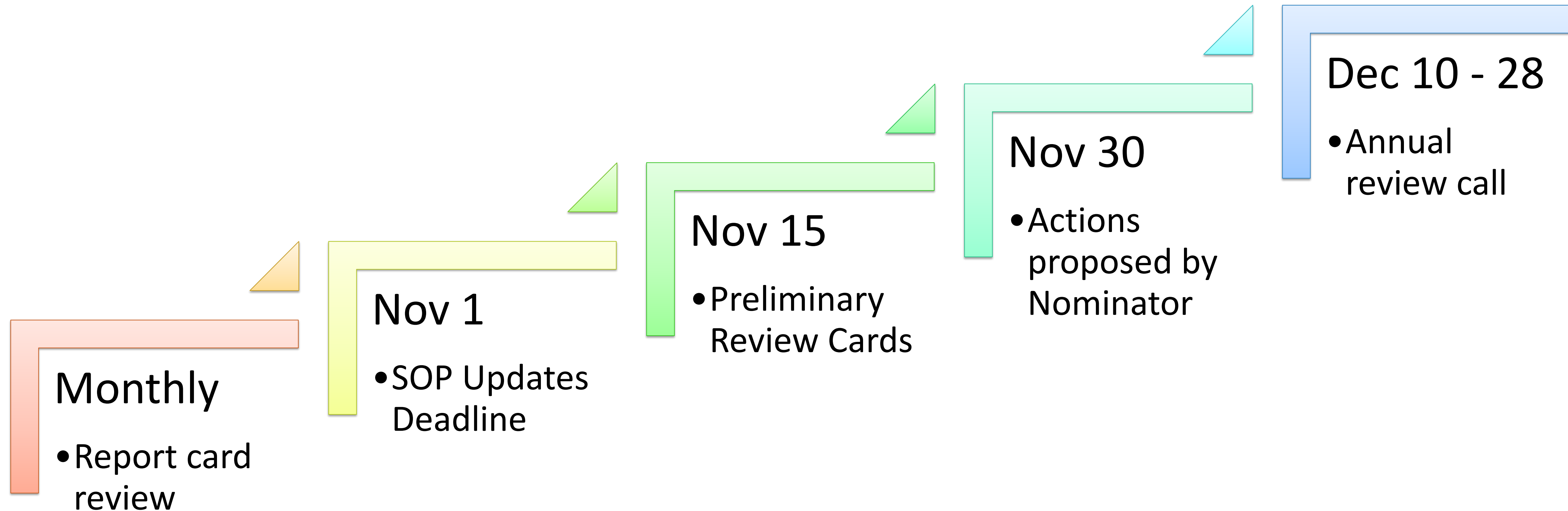
- Nonconformities are classified according to their severity or impact on the nomination process and on the accuracy of the data provided to the CDCB system:
 - **Minor nonconformity** – Any nonconformity which adversely affects the quality of nomination process but is out of the nominator's control.
 - **Major nonconformity** – Any nonconformity other than critical, which impacts the quality of the nomination process and can be avoided or reduced by optimization of the nominator's practices.
 - **Critical nonconformity** – Any nonconformity which hampers the nomination process and requires additional resources from the CDCB staff to be resolved or has a deleterious impact on data quality.

Classification of CDCB's genomic nomination performance metrics according to their impact





Genomic Nominators Annual Review 2018





Questions?

CDCB

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12:00	Lunch