

# Pigeon adapted AoAV-1 genotypes circulating in Europe: a story of hidden data...

---

**Steven Van Borm (NRL Belgium)**  
Annual Meeting of the NRLs for AI/ND , 16-17/10/2025

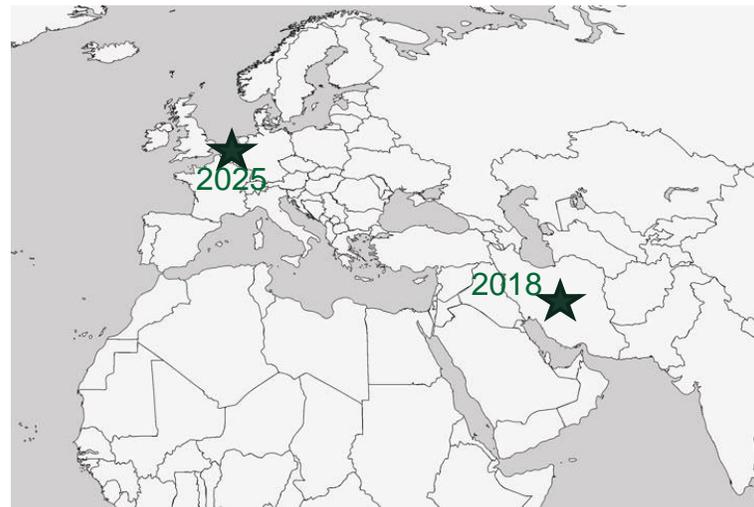


# Slow sharing of genomic sequences (XXI) public data gap

Only public data (NCBI Nt):



- Reported isolation of XXI in European countries
- Presentations at EURL meetings (DE, SE, LUX, ...)



Present in Europe since ...?

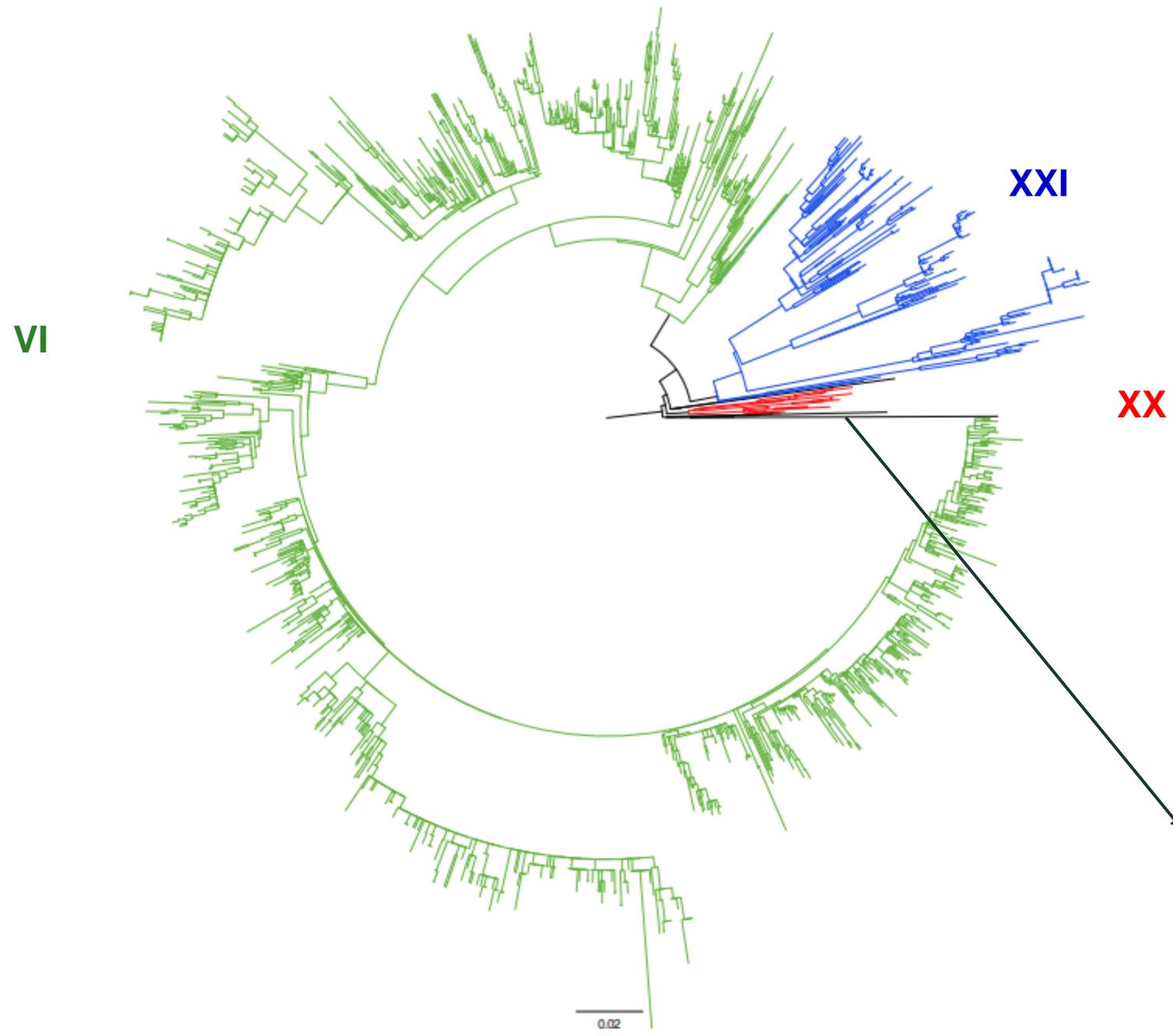
# genomic data of AoAV-1 Class II genotypes VI and XXI

Unpublished data collected from NRL colleagues

| country     | samples | sequences   | period    | genotypes |
|-------------|---------|-------------|-----------|-----------|
| Serbia      | 1       | full F      | 2024      | VI        |
| Denmark     | 2       | full F      | 2022-2023 | VI ; XXI  |
| Cyprus      | 3       | partial F   | 2022-2023 | XXI       |
| Sardegna IT | 3       | full F      | 2024      | VI        |
| Belgium     | 17      | full genome | 2018-2025 | VI ; XXI  |
| Poland      | 31      | full F      | 2002-2025 | VI ; XXI  |
| Sweden      | 62      | full genome | 2007-2025 | VI ; XXI  |
| Germany     | 492     | partial F   | 1992-2025 | VI ; XXI  |
| Italy       | 575     | partial F   | 2021-2025 | VI ; XXI  |
| Luxembourg  | 77      | Full F      | 2013-2025 | VI ; XXI  |

- Unpublished data: heterogenous surveillance efforts pigeons
- + Dimitrov full F dataset (May-09-2022)
- +NCBI Nt (May-10-2022 – Sep-11-2025) (“fusion” ; minlen=350)
  
- Use Dimitrov pilot dataset to identify genotypes VI, XXI, XX (monophyletic group)
- Total: 1493 full & partial F sequences





Ancestral sequences  
1951-1971 allready  
have global distribution

# Genotype XXI

XXI.2 , pigeon,  
EUR(IT, CYP, SRB) (ME,  
AFR)  
2010-2024

Tip label by sample origin:

Europe

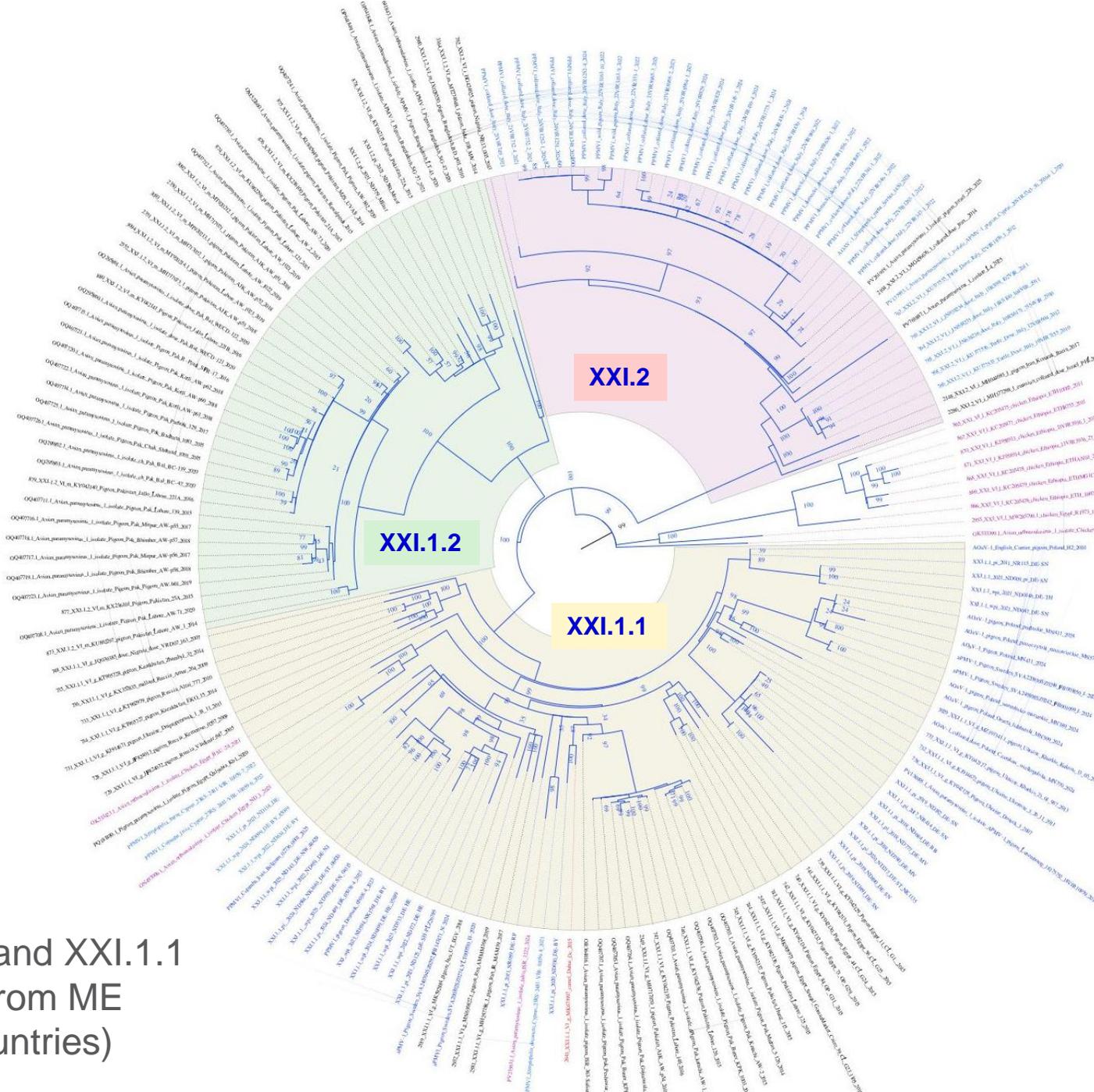
Other global regions

Poultry spillover

XXI.1.2 , pigeon,  
ME AS 2010-2021

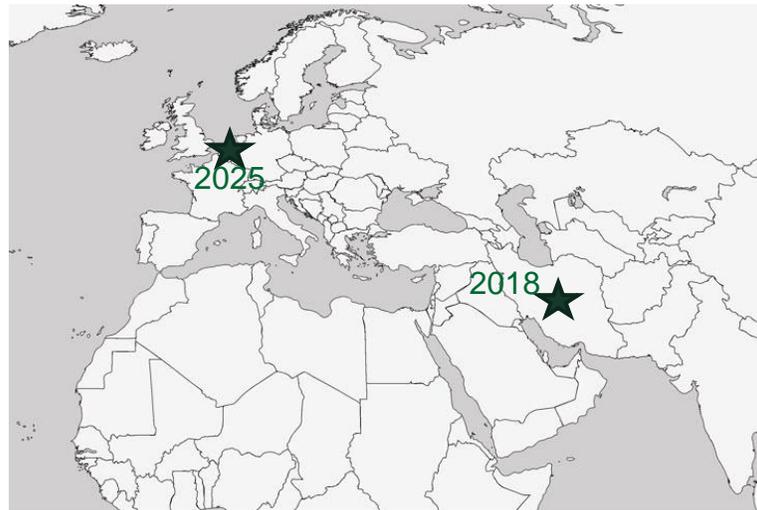
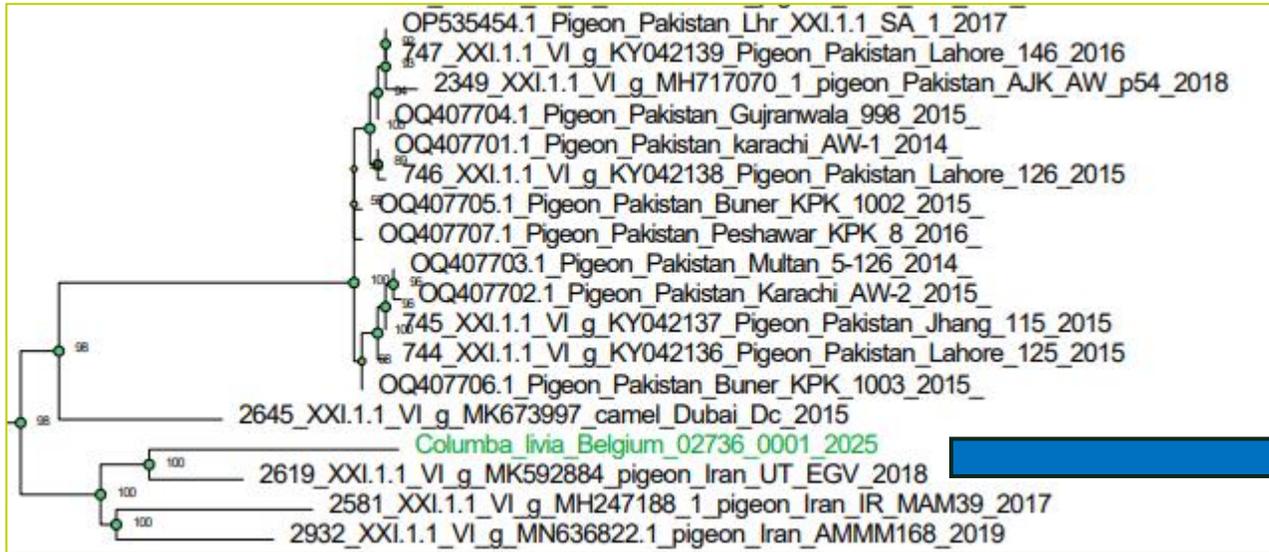
Ancestral, Chicken  
Ethiopia 2005-2012

XXI.1.1 , pigeon,  
EUR (NW, CYP) ME AFR  
2005-2025



Overall :

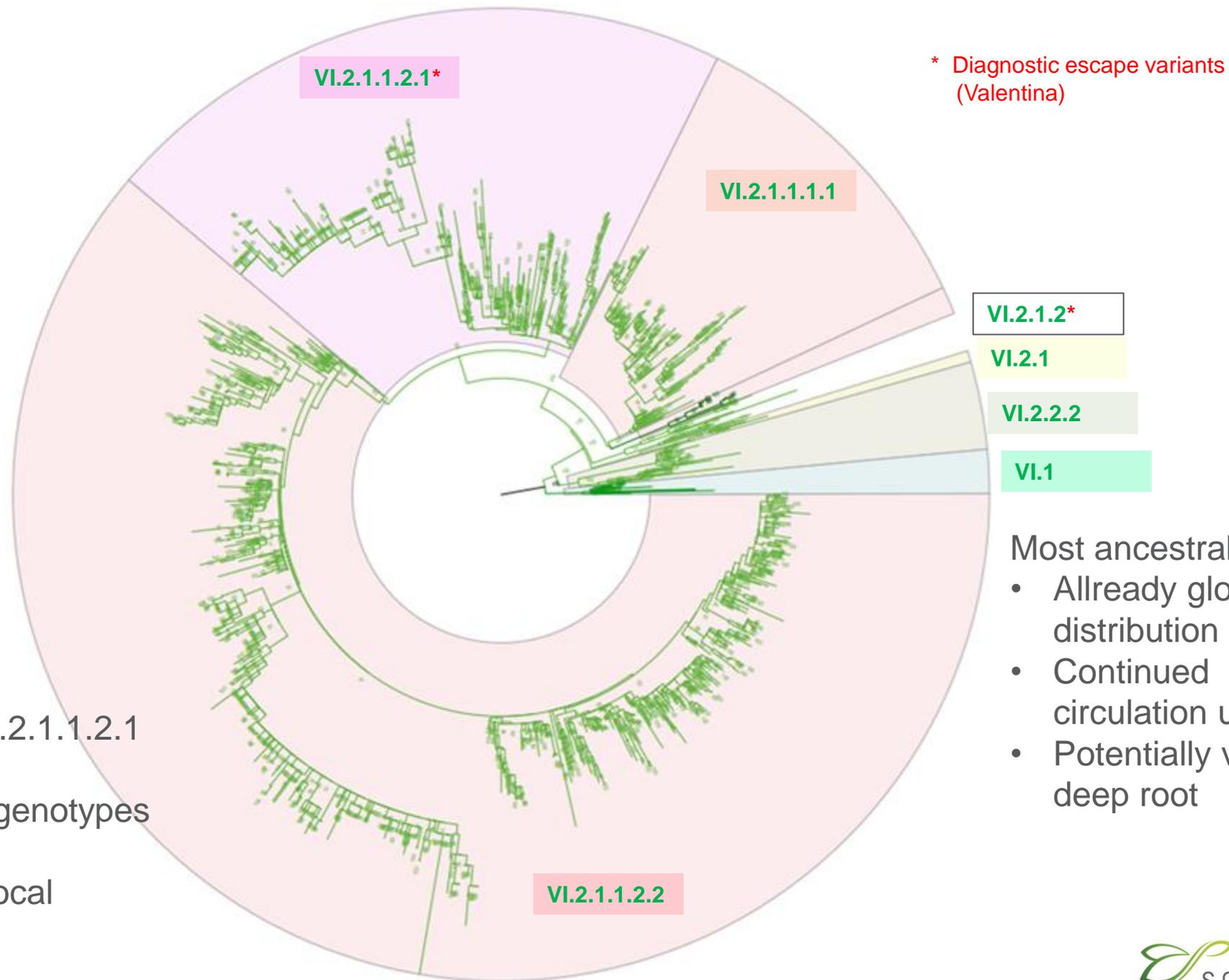
- In EU: endemic XXI.2 and XXI.1.1
- Several introductions from ME
- Sampling bias (few countries)



- Partial sequences: unresolved local branches (DE, IT)



# Genotype VI



## Overall :

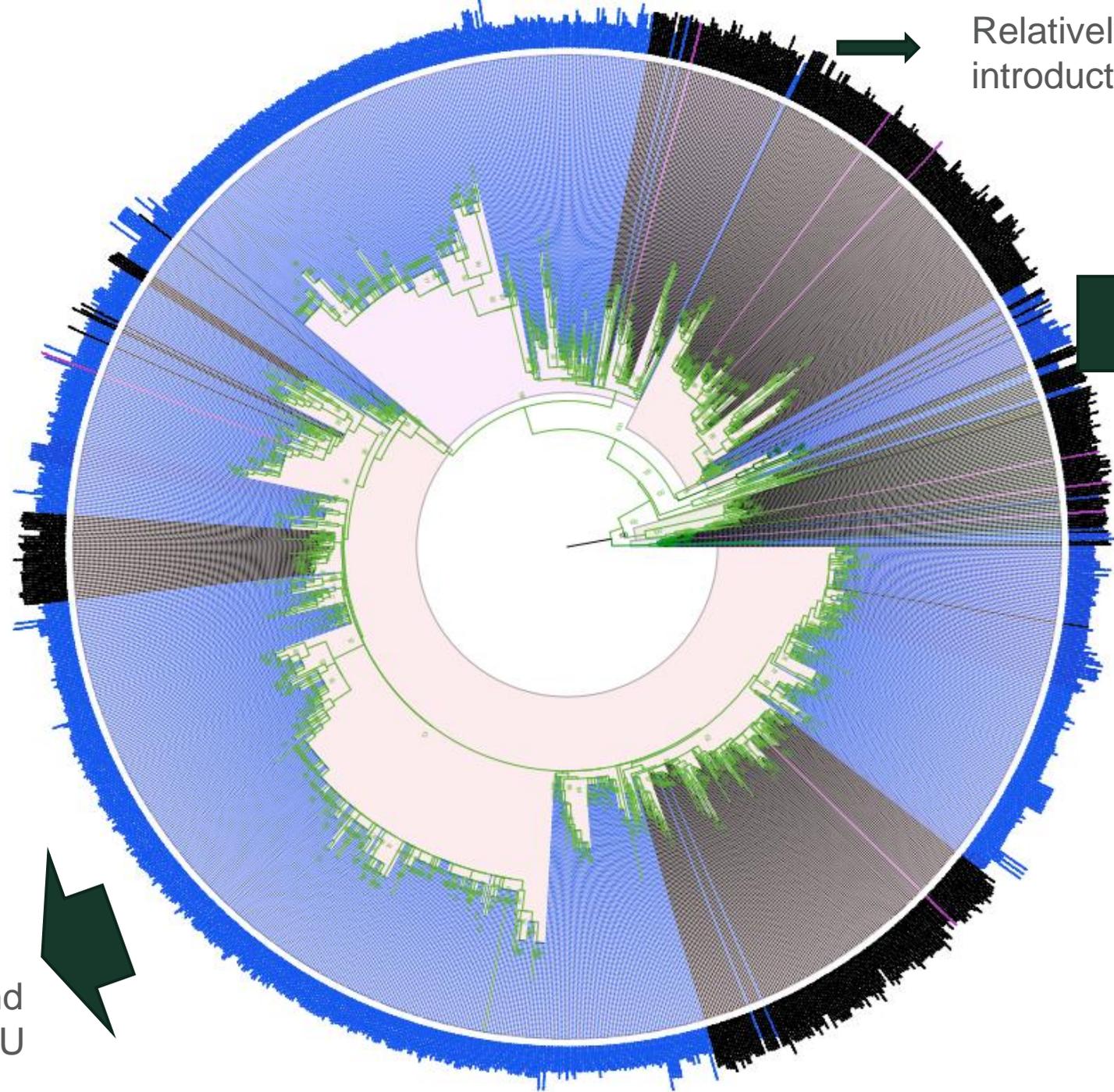
- 1980'ies -.....
- Global circulation
- Huge genetic diversity
- EU sequences mostly VI.2.1.1.2.1 and VI.2.1.1.2.2
- EU sequences in all subgenotypes except VI.2.1 (only ISR)
- Partial seq: unresolved local branches (DE, IT)

## Most ancestral VI.1:

- Already global distribution
- Continued circulation until 2006
- Potentially very deep root

# Genotype VI

Tip label by sample origin:  
Europe  
Other global regions  
Poultry spillover



Relatively isolated introductions in EU

Frequent contact EU/other regions

Circulation and evolution in EU

## Next steps



- **Release** unpublished data (sequence authors)
- Full ML trees → participants to help selecting **partial sequences** samples for full F sequencing (DE, IT, CY)
- **Location, time** → phylogeographic reconstruction (discrete: country). e.g. endemic but how connected between global regions; throughout europe?
- Additional unpublished sequences? (focus genotype XXI?).  
[Steven.VanBorm@sciensano.be](mailto:Steven.VanBorm@sciensano.be)

# Acknowledgements

- Dimitrov et al. 2019 and linked dataset
- Authors public *Orthoavulavirus javaense* sequences
- Colleagues european NRLs for sharing unpublished data

EURL, IT (A. Fusaro , A. Bortolami, I. Monne) ; DE (C. Grund) ; SE (S. Zohari) ; PL (A. Pikula) ; LU (C. Snoeck); CY (V. Christodoulou) ; DK (C. Hjulsager) ; RS (D. Vidanovic)

- NRL BE, especially Killian De Geest

# Discussion

- Timely release unpublished data
- Surveillance bias pigeons
- Terminology PPMV1(VI), « pigeon adapted genotypes »
- Control and surveillance implications
  - Endemic Columbiformes (wild ↔ domestic)
  - Velogenic by F cleavage site definition
  - Rare poultry spillover possible





**Steven Van Borm**

**Steven.VanBorm@sciensano.be**

**www.sciensano.be**